

Как ПОДГОТОВИТЬ СТЕНДОВЫЙ ДОКЛАД?

Что такое стендовый доклад?

- это результаты научного исследования, оформленные в виде большого бумажного плаката (постера).
- **Постер-доклад** – достаточно новая для России, но хорошо себя зарекомендовавшая форма представления результатов научного исследования на крупной конференции. Автор демонстрирует свой материал в письменной форме, коллеги имеют возможность ознакомиться в нем и задать вопросы непосредственно в процессе знакомства с данными.

Примеры:

RNA interference in mammalian cells using low siRNA concentrations



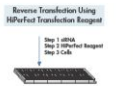
Jörg Drenth*, Silvia Magyar*, Anja Grewe*, Cornelia Schmidt†, Peter Hahn*, Dong Liang*, Subu Yerramilil†, Eric Lader†, Wolfgang Bietke*, and Jie Kang*

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Introduction

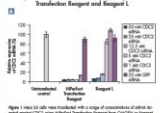
The use of short interfering RNA (siRNA) for knockdown of gene expression has become a powerful tool in molecular and cell biology. Some applications require the use of low siRNA concentrations (less than 5 nM), for example, to decrease the probability of nonspecific effects.

We have developed a transfection reagent, HiPerFect Transfection Reagent, which allows efficient gene knockdown with siRNA concentrations from 1 nM-10 nM, depending on the cell type and siRNA used. HiPerFect Transfection Reagent has been tested and validated for many cell types, including primary cells. Effective knockdown in primary cells demonstrates that HiPerFect Transfection Reagent allows low siRNA concentrations. A FastForward siRNA Transfection Protocol has been developed for rapid transfection with HiPerFect Transfection Reagent. This protocol allows cell seeding and transfection on the same day.



Highly effective knockdown of CDC2 expression with low siRNA concentrations

Comparison of Knockdown Efficiency Using HiPerFect Transfection Reagent and Reagent L



HiPerFect Transfection Reagent from QIAGEN allowed highly efficient CDC2 knockdown with siRNA concentrations as low as 1 nM.

In contrast, Reagent L from another supplier provided less efficient knockdown of all concentrations tested. For concentrations lower than 5 nM, knockdown of only 1.5% or less was observed.

Transfection and knockdown in a wide range of cell types

A wide range of cell types have been successfully transfected using HiPerFect Transfection Reagent. For an up-to-date list of cell types and more detailed information go to www.qiagen.com/transfection.

A Wide Range of Successfully Transfected Cells

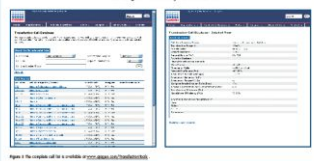


Figure 1 The complete list is available at www.qiagen.com/transfection.

Rapid, efficient lamin A/C knockdown in human primary cells

Lamin A/C Knockdown Using the Fast-Forward Protocol with Low siRNA Concentrations

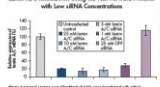


Figure 2 A faster center assay of knockdown.

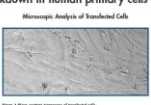


Figure 3 A faster center assay of knockdown.

HiPerFect Transfection Reagent allowed highly efficient lamin A/C knockdown with siRNA concentrations as low as 1 nM.

The FastForward Transfection Protocol allowed rapid transfection, with cell seeding and transfection carried out on the same day.

HiPerFect Transfection Reagent Allows Effective Uptake of Low Amounts of Alexa Fluor® 488 Labeled siRNA

Reversibly labeled siRNA shows highly efficient uptake at low siRNA concentrations

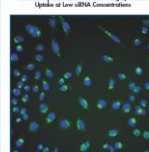


Figure 4 Reversible labeling of siRNA with Alexa Fluor 488 allows highly efficient uptake at low siRNA concentrations. HiPerFect Transfection Reagent allows efficient uptake of reversibly labeled siRNA.

Microscopic analysis of reversibly labeled siRNA showed siRNA was taken up into virtually all cells when HiPerFect Transfection Reagent was used.

Summary

HiPerFect Transfection Reagent allows gene silencing using as little as 1 nM siRNA. Transfection of low siRNA concentrations may be necessary to avoid off-target effects. Using HiPerFect Transfection Reagent ensures that effective knockdown can be achieved with very low siRNA concentrations.

The reverse transfection protocol is ideal for RNAi screening. The reverse transfection protocol can be easily extended which is particularly useful for high-throughput applications. The reverse transfection protocol is available at www.qiagen.com/transfection.

HiPerFect Transfection Reagent has been tested for a range of cell types. Many cell lines and primary cells have been successfully transfected using low siRNA concentrations and HiPerFect Transfection Reagent. For an up-to-date list, visit www.qiagen.com/transfection.

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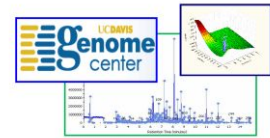
HiPerFect Transfection Reagent is available at www.qiagen.com/transfection.

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WWW.QIAGEN.COM

Biomarkers and Metabolomics: Practical Implication.

Vladimir V. Tolstikov
UC Davis Genome Center, Davis, CA

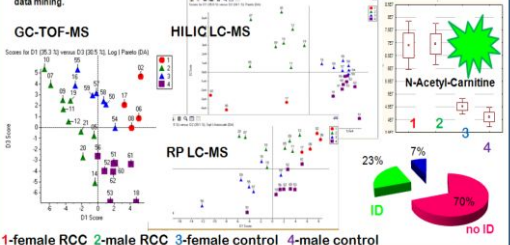


Department of Internal Medicine
UC DAVIS HEALTH SYSTEM
Robert H. Weiss, M.D.
Division of Nephrology & Cancer Center

Phase I Aim: Find potential small molecule biomarkers for metastatic kidney cancer (RCC). Metabolomics pilot study. Proof of the concept Phase I is completed.

Phase II Aim: Use Phase I proof of concept methodology to carry out next set of studies: Run Metabolomics study on large group cancer patients and volunteers. Identify the most prominent biomarkers suitable for RCC diagnostic test development.

Method: Perform comprehensive profiling of urinary metabolites by GC-TOF-MS, RP-LC-ESI-MS and HILIC-LC-ESI-MS methods, analyzing urine samples from healthy volunteers and cancer patients. Apply multivariate statistics for data mining.



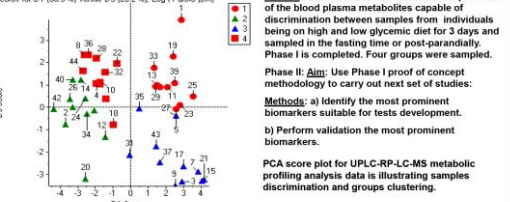
1-female RCC 2-male RCC 3-female control 4-male control



John W. Newman
USDA, ARS Western Human Nutrition Research Center (University of California, Davis)

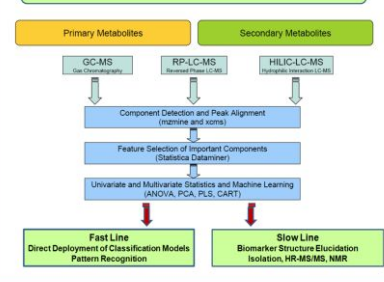
Phase I Aim: Find potential differences between groups of individuals following high and low glycemic diet. Metabolomics pilot study. Proof of the concept.

Method: Perform blood plasma metabolite profiling by UPLC-RP-ESI-ITMS. Apply multivariate statistics for data mining.



Acknowledgments: Wei Zou, Kindra Brooks (UCD Metabolomics Core)
<http://metabolomics-core.ucdavis.edu/>

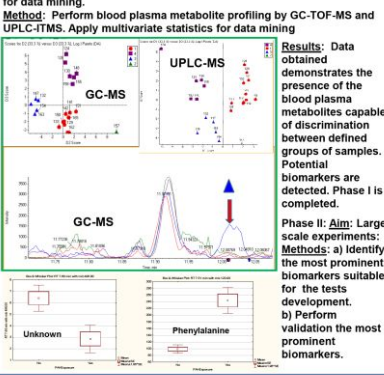
Small Molecule Biomarkers Workflow



Yale University
Yale School of Public Health
Kathleen M. McCarty
Division of Environmental Health Sciences

Phase I Aim: Find potential differences between groups of individuals with PAH exposure and without it. Among these subjects PAH-DNA adducts detected and not detected. Four groups of subjects are defined for data mining.

Method: Perform blood plasma metabolite profiling by GC-TOF-MS and UPLC-ITMS. Apply multivariate statistics for data mining.



Results: Data obtained demonstrates the presence of the blood plasma metabolites capable of discrimination between defined groups of samples. Potential biomarkers are detected. Phase I is completed.

Phase II Aim: Large scale experiments: Methods: a) Identify the most prominent biomarkers suitable for the tests development. b) Perform validation the most prominent biomarkers.

В современном мире
наблюдается
переизбыток информации
и недостаток времени.

- Поэтому в последнее время на международных научных конференциях делают все больше стендовых докладов.



У стендового доклада есть и другие преимущества:

- 1. Представляя стендовый доклад, вы можете более свободно излагать информацию, не заботясь о времени.
- 2. Можно вступить в более тесную коммуникацию с людьми, которых интересует Ваше исследование.
- 3. Можно избежать устного доклада, если Вы страдаете дисфункцией речи

- ④ 4. Вы можете использовать этот же постер для других конференций.
- ④ 5. Стендовый доклад можно повесить в своем учебном заведении и познакомить со своими исследованием коллег, которые не смогли приехать на конференцию.
- ④ 6. Наконец, Вы можете поместить PDF своего доклада в банк постерных докладов, например на www.eposters.net, и тогда больше людей смогут прислать Вам свои комментарии.

Изготовление постера – творческий процесс, но тем не менее следует придерживаться некоторых основных принципов.

- ◎ **Читаемость**
- ◎ **Наглядность**
- ◎ **Понятность**
- ◎ Тем не менее, его прочтет большее количество людей, если Вам удастся придать ему привлекательный внешний вид!

Размер постера

- 120 см на 80 см – формат А0 (расположение листа – по вертикали или горизонта-ли).
- Постер может состоять как из одного листа формата А0, так и из нескольких листов формата А4 или А3 (в сумме не превышающих лист формата А0).

Структура

- В верхней части листа содержится следующая информация:
- * название постера,
- * ФИО автора (ов),
- * краткие сведения об авторах (уч. степень, должность и место работы),
- * контактные данные (желательно указать адрес электронной почты).

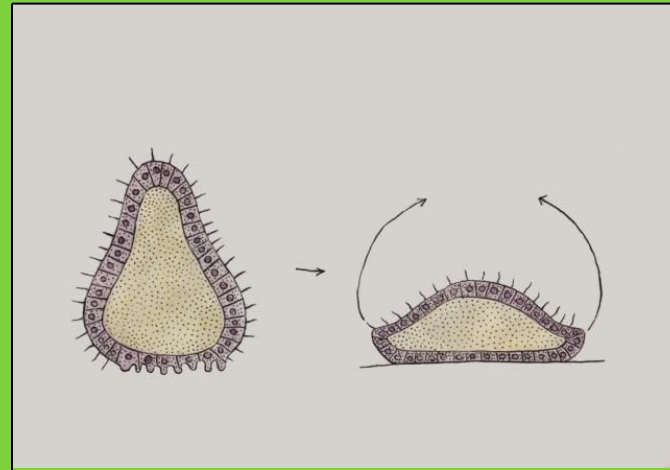
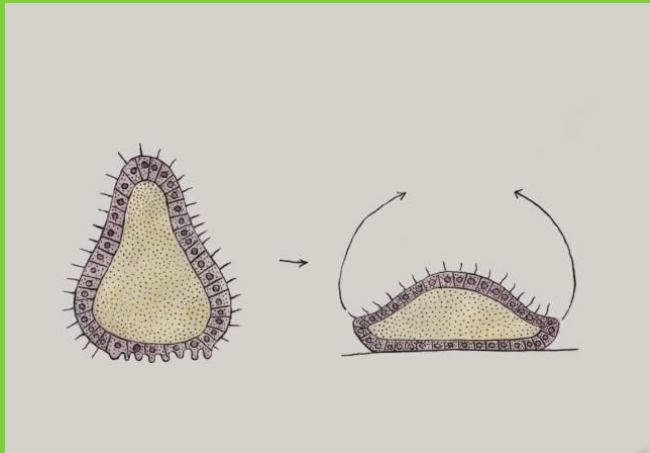
Постер (стендовый доклад) представляет собой краткое сообщение о научной работе и обычно содержит все те же разделы, что и научная статья:

- ◎ * введение (актуальность),
- ◎ * цель исследования,
- ◎ * методы исследования,
- ◎ * результаты и их обсуждение,
- ◎ * выводы,
- ◎ * краткий список литературы.

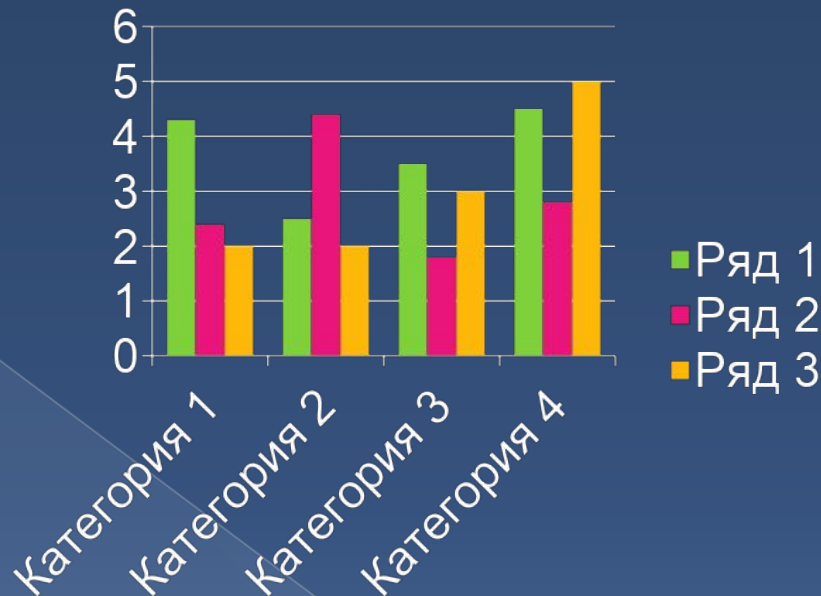
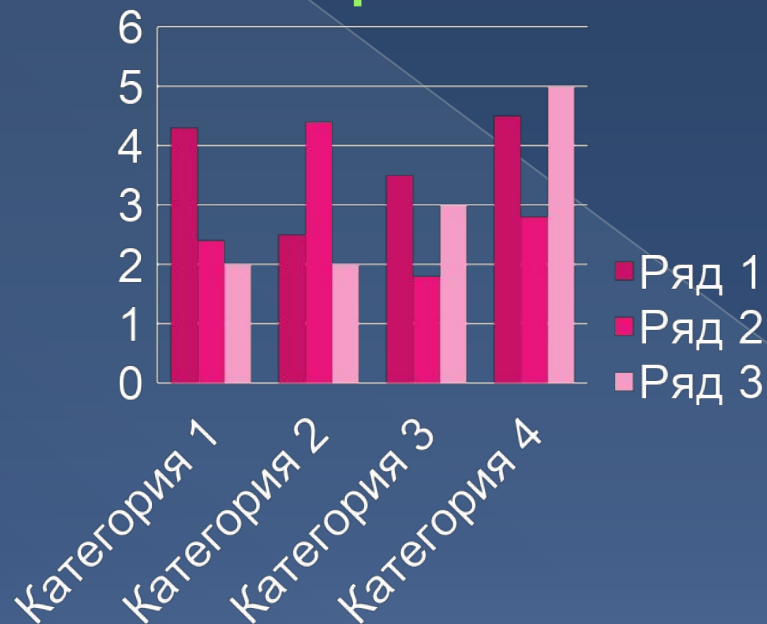
Иллюстрации

- * графические материалы облегчают процесс изложения доклада,
- * иллюстрации должны читаться участниками на расстоянии одного метра и далее,
- * диаграммы, рисунки и схемы предпочтительно оформлять простыми и четкими линиями,
- * заголовок постера рекомендуется печатать не менее, чем 60-м кеглем, а сам текст постера - не менее, чем 20-м.

Фотографии и рисунки выглядят выигрышнее, если обвести их узким черным контуром:



Как выбрать цвета для диаграмм и графиков?



Не используйте однотипные цвета

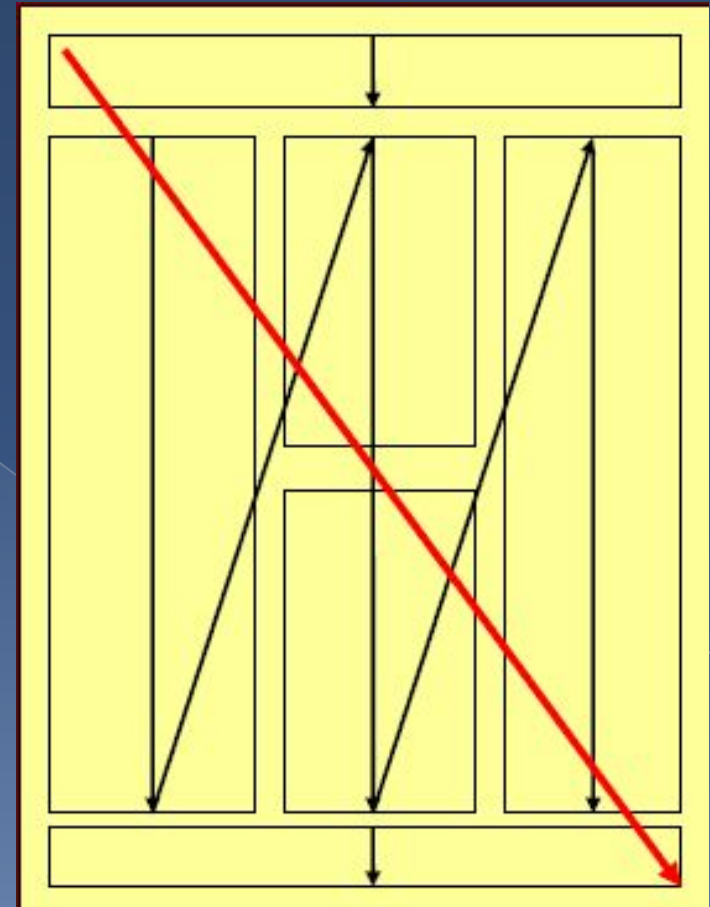
Используйте цвета, которые хорошо отличаются друг от друга!

Как выбрать дизайн постера?

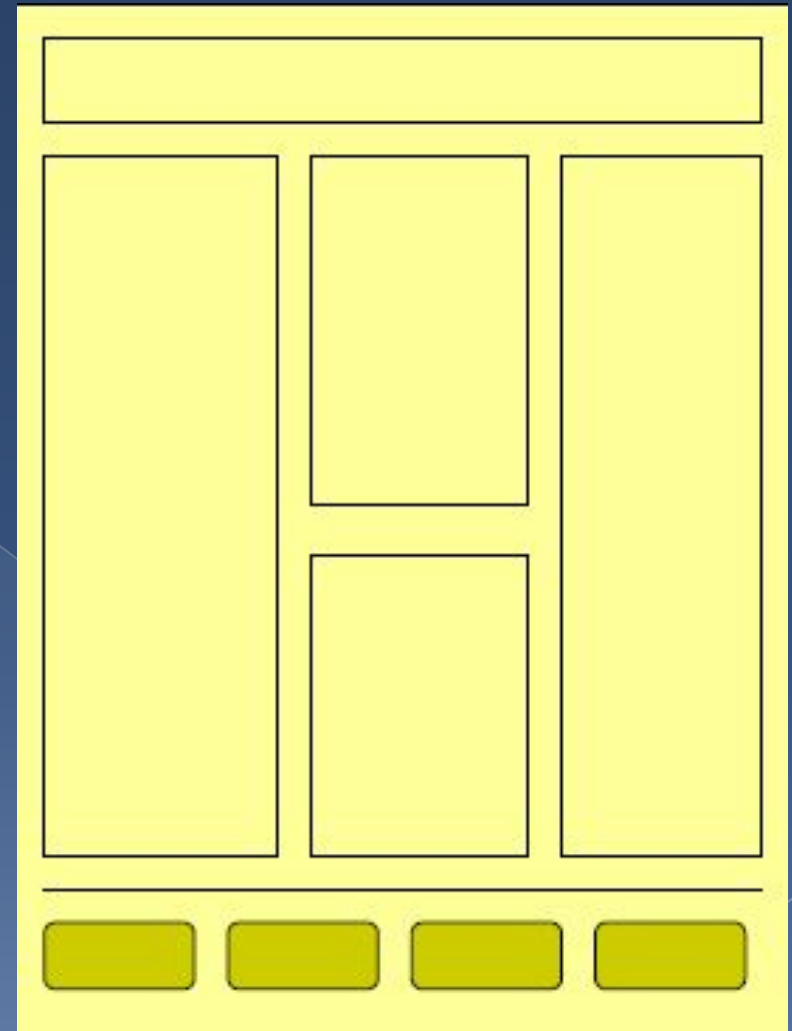
- Используйте оформление, которое соответствует теме Вашего доклада
- Не используйте только черные и белые цвета.
- Лучше используйте пастельные цвета

Как разместить информацию на стенде?

- В европейских языках читают слева направо и сверху вниз, поэтому размещайте информацию так, чтобы читая, человек двигался от верхнего левого края к нижнему правому.



**Несущественные
разделы, которые не
нужны для понимания
Вашего исследования,
такие как
благодарности, список
литературы и т.д. (хотя
некоторые люди их
читают), можно вынести
в отдельное поле внизу
доклада:**



- ФИО авторов как правило размещают под названием, а фотографии – в правом верхнем углу.

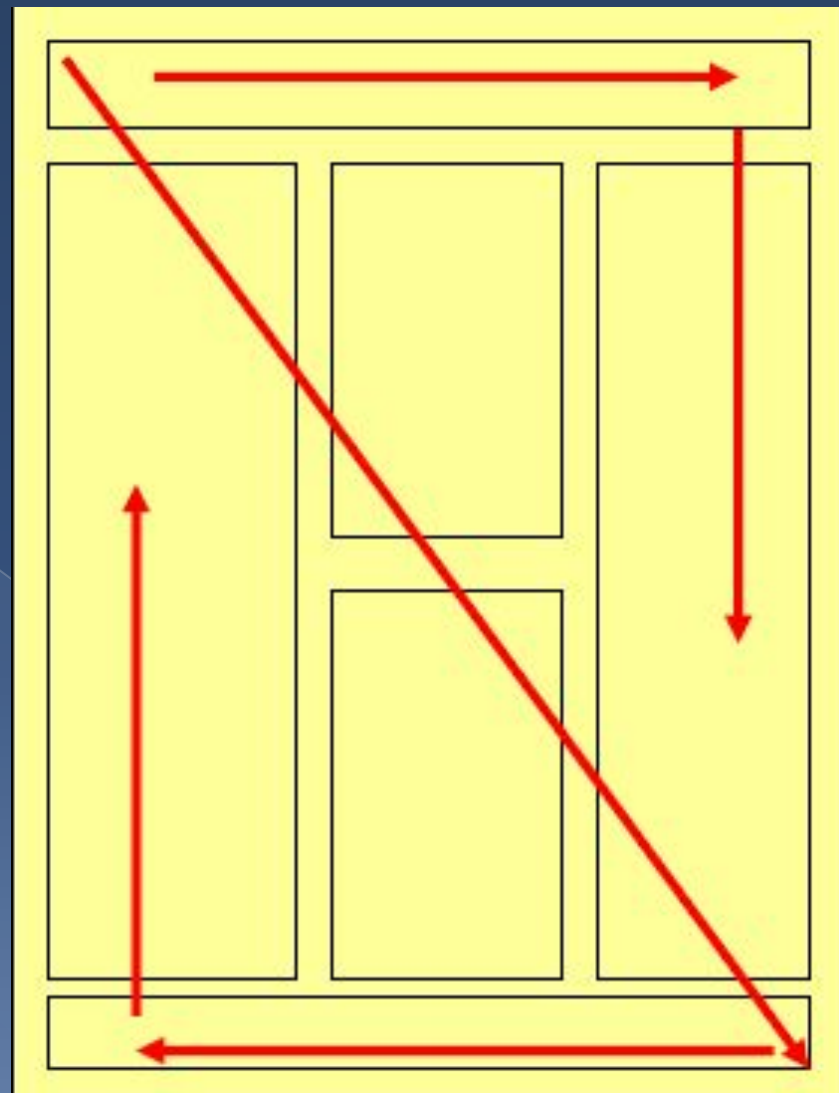
Рогатые жабы: как поймать и приручить?

Петр Васечкин

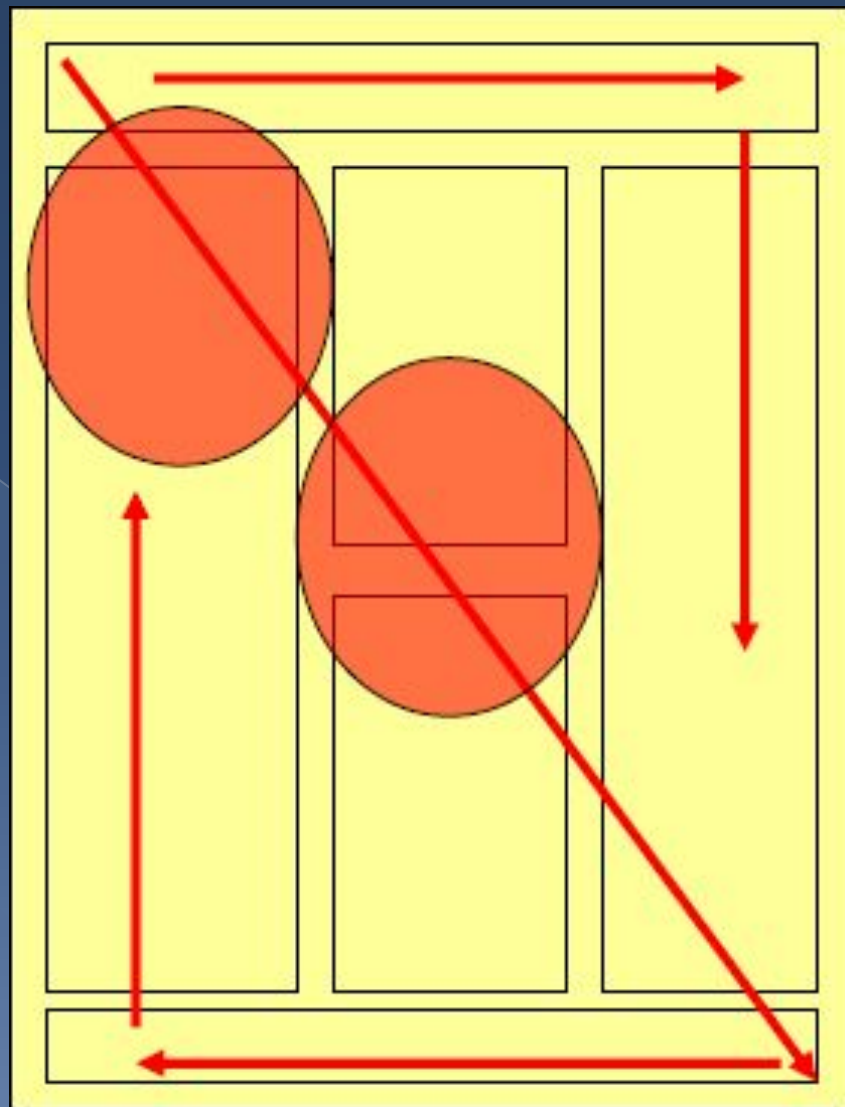


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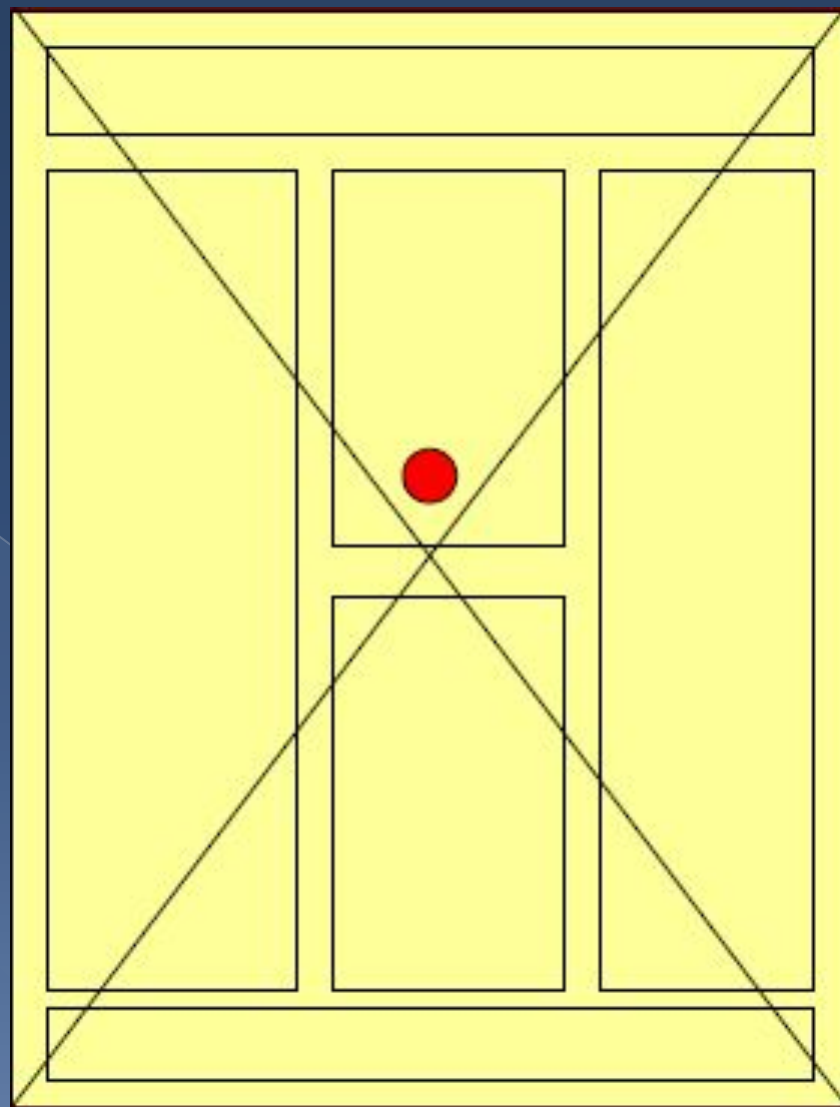
- При просмотривании страницы внимание в основном направлено на верхний левый угол и центр, затем правый нижний угол, затем левый нижний и правый верхний.



- Поэтому самую важную информацию лучше помещать в левый верхний угол и в центр.


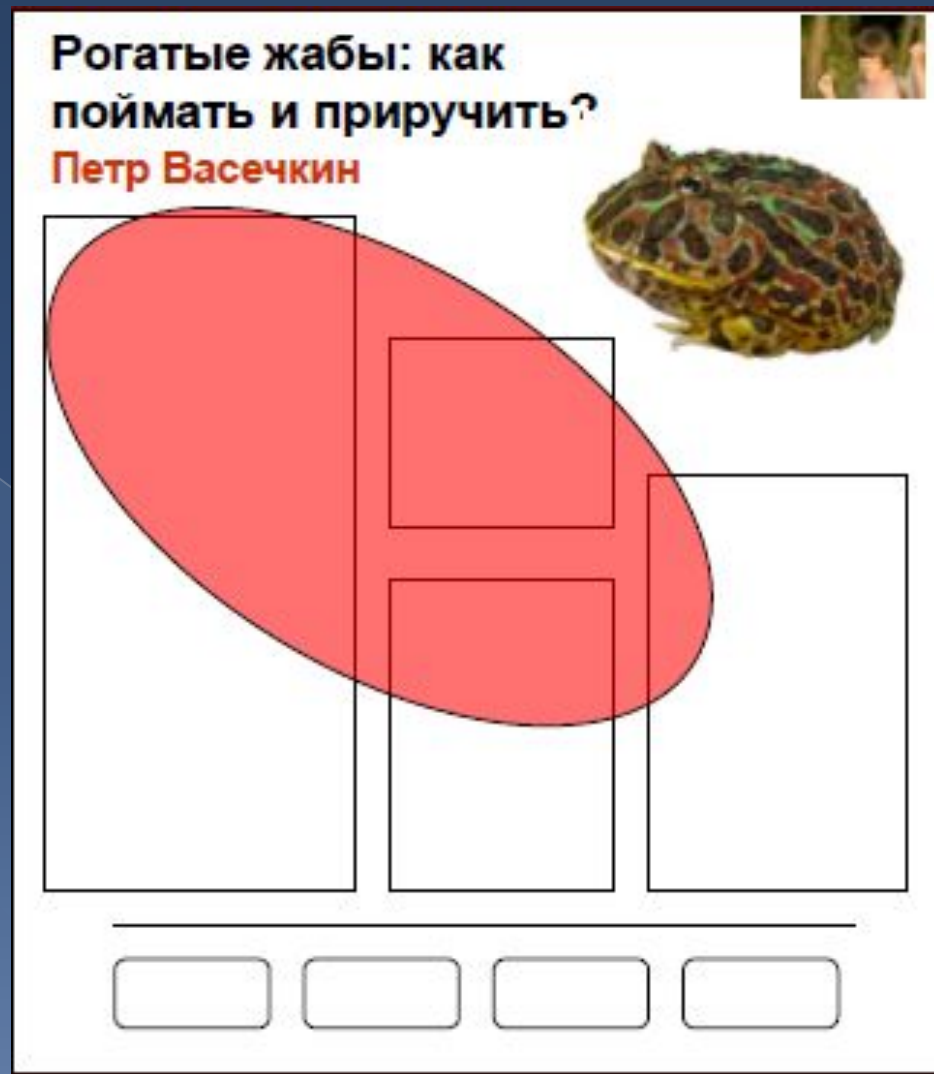


- Помните, что оптический центр страницы примерно на $1/8$ выше его геометрического центра.

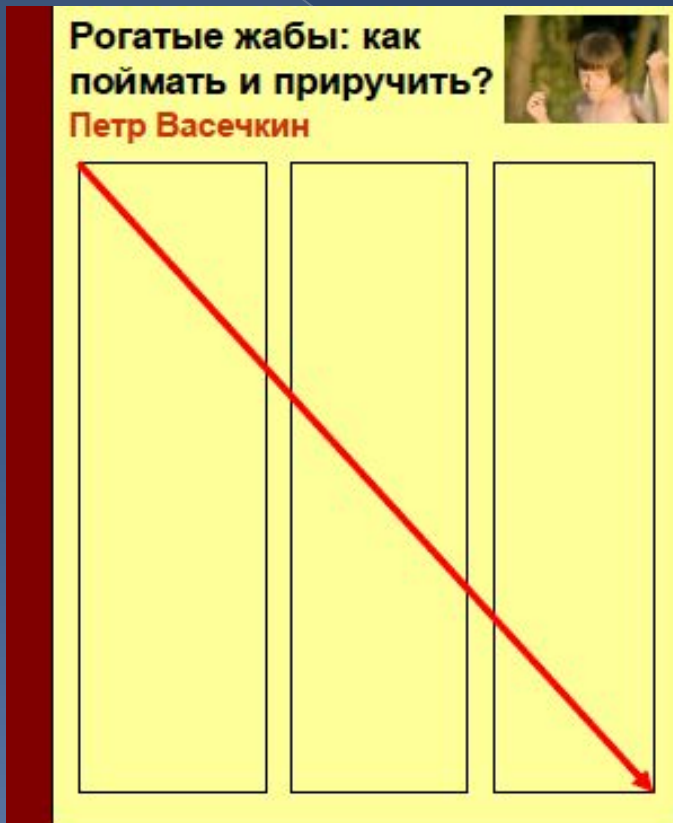


- Правый верхний угол лучше занять фотографией и автором, необходимым и эмблемами или элементом дизайна:

Рогатые жабы: как поймать и приручить?
Петр Васечкин



По способу размещения информации можно выделить два типа постеров:



С полосным расположением



и с модульным расположением.



Пример постера с полосным расположением частей:

Metacarpal Proportions in *Australopithecus africanus*

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¹Evolutionary Paleobiology Doctoral Program, Center for Advanced Study of Human Paleobiology,
²Department of Anthropology, The George Washington University, 2118 G St., NW, Washington, DC, USA

Background and Introduction

- Metacarpal bones are characterized by relatively long and broad distal metacarpal (MC) and short proximal shafts (metacarpal MC2-5) (see fig. 1)
- Distal epiphyses have long, slender and relatively short shafts (metacarpal MC1) (see fig. 1)
- Metacarpal bones are important for understanding changes in functional morphology and associated changes in manipulation and prehension in the hominid lineage (see discussion and references)

Hominin hands

- How were hominid hands used? Were they becoming more like modern hominid hands?
- Do they have evolved with early hominid hands from their shared primate ancestor? How do they differ from modern hominid hands? (see references)
- Do they have evolved with early hominid hands from their shared primate ancestor? How do they differ from modern hominid hands? (see references)

Materials and Methods

Species	MC1	MC2	MC3	MC4	MC5
<i>A. africanus</i>	100	100	100	100	100
<i>A. africanus</i>	100	100	100	100	100
<i>A. africanus</i>	100	100	100	100	100

Resampling Procedure

- To make an average length estimate for each metacarpal, we used the MC of individual individuals (see fig. 1)
- MC1, MC2, MC3, MC4, MC5 are all included in the analysis
- MC1 is excluded from the MC1-5 analysis
- MC1 is excluded from the MC1-5 analysis

Principal Components Analysis

- PCA of the metacarpal lengths (MC1-5) shows that the first two principal components (PC1 and PC2) explain 80% of the variance in the data
- PC1 is related to the length of the metacarpals
- PC2 is related to the shape of the metacarpals

Testing Isometry

Resampling Procedure Passes the Actual Mean Value

Results

- Metacarpal bones have relatively long distal and long MC1 shafts
- A. africanus* has not significantly different distal epiphyses to relative MC1 length, but was significantly different from modern hominid hands
- A. africanus* has not significantly different distal epiphyses to relative MC1 length, but was significantly different from chimpanzees and orangutans

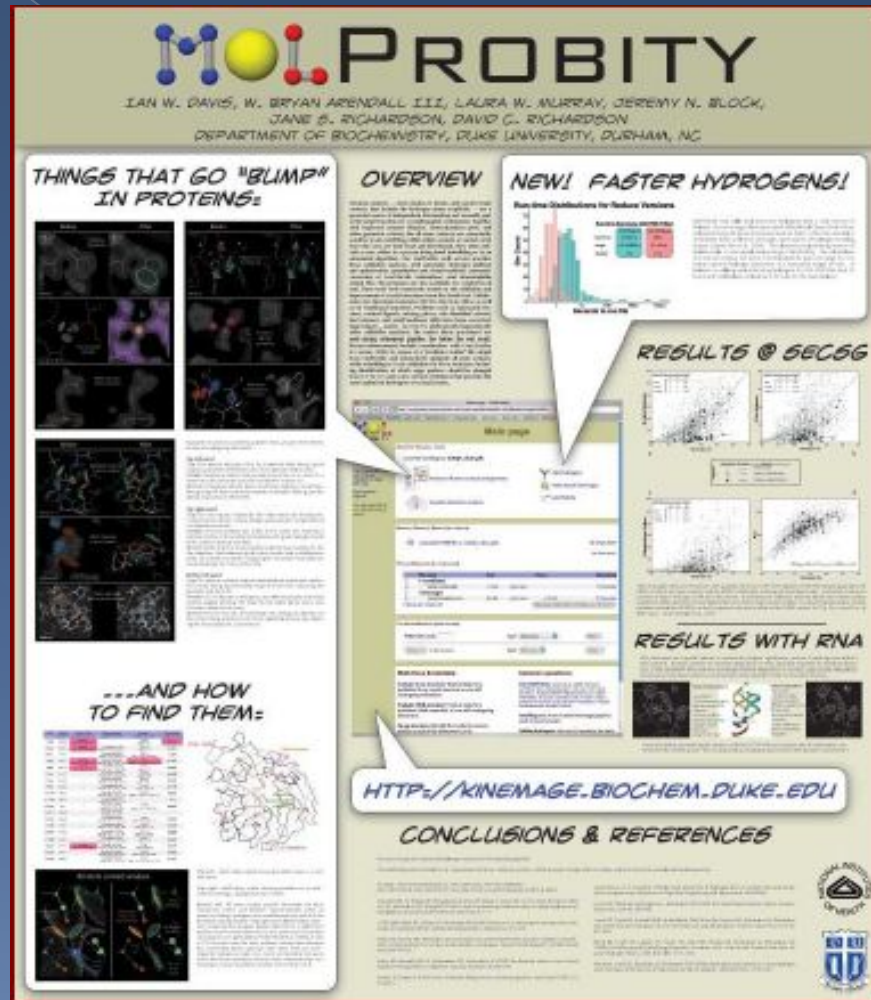
Discussion and Conclusions

- The *A. africanus* hand, with its relatively long distal epiphyses, would have been capable of thrust and grasp, but to pull (see references)
- However, a relatively slender MC1 suggests that the *A. africanus* hand was not a subject to the same types of mechanical stresses as modern and early hominid hands (see references)

Short MC2-4, tool use, and arboreality in *A. africanus*?

- A. africanus* phenotype was not significantly different from modern hominid hands (see references)
- It is possible that short MC2-4 indicate a shift in selection for short MC2-4 (see references)
- Can we not arboreality in part of the *A. africanus* is consistent with the short distal epiphyses (see references)
- Short distal epiphyses would have produced power grip, but short MC2-4 suggest that this was not the case

Пример постера с модульным расположением частей:



Помните так же, что заголовки не должны совпадать по высоте:

Рогатые жабы: как поймать и приручить?
Петр Васечкин



Правильно

Рогатые жабы: как поймать и приручить?
Петр Васечкин



Неправильно

- Ширину полосы лучше сделать около 40 знаков –такой текст читается быстрее всего.
- В большинстве случаев для выделения лучше использовать *курсив*, а не *подчеркивание*

Советы и рекомендации

- * подготовьте постер и сообщение на 3-4 минуты заранее
- * при желании Вы сможете принести ноутбук и показывать с него дополнительные демонстрационные материалы (но, к сожалению, розетки в непосредственной близости от постера не будет)
- * рядом с постером можно разместить конверт с любым дополнительным материалом (визитки, лист обратной связи, копии постера и т.п.)

Помните!

- ⦿ На чтение Вашего доклада не должно уходить более, чем 7 минут!
- ⦿ Поэтому мы рекомендуем Вам делать текстовые отрывки не более 150 слов в длину.

Ваш текст не должен занимать более одной четверти площади слайда!



27-hydroxycholesterol is a Novel Endogenous Regulator of Estrogen Receptor Activity

Carolyn D. DuSell and Donald P. McDonnell.

Department of Pharmacology and Cancer Biology, Duke University Medical Center, Durham, NC 27710



Introduction

There are two isoforms of the estrogen receptor (ER), ER α and ER β , which upon ligand binding regulate the transcription of target genes. In general, it is thought that the proliferative effects of estrogens are mediated primarily through ER α , whereas the anti-proliferative ones are through ER β . There are three endogenous estrogen receptor agonists that activate both ER α and ER β , the most potent being 17 β -estradiol (E2). The majority of breast cancers express ER α and rely on E2 as a growth stimulus, prompting the development of therapies aimed at reducing E2 levels, such as aromatase inhibitors. Unfortunately, many breast cancers become resistant to aromatase inhibitors, but continue to rely on ER α for growth. Tumor-infiltrating macrophages (TAMs), which are associated with increased tumor growth and decreased patient survival, possess high cytochrome P450 27A1 (CYP27A1) enzymatic activity and are therefore capable of producing 27-hydroxycholesterol (27HC), which we have shown to be a novel endogenous partial agonist for ER. It is therefore possible that macrophage infiltration of a breast tumor provides an alternate estrogenic ligand to promote tumorigenic behavior. Furthermore, the production of 27HC by either TAMs and tumor epithelial cells, and the estrogenic activities of 27HC, presents a potential mechanism for the development of resistance to aromatase inhibitors. Therefore, understanding the intricacies of the regulation of ER by 27HC and how this impinges on estrogen signaling will have a profound impact on estrogen-regulated biology, especially in breast cancer.

Hypothesis & Objectives

Hypothesis:

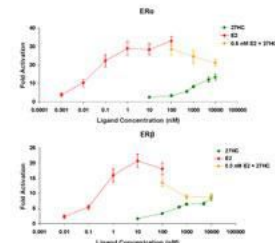
We hypothesize that 27HC is a partial agonist for ER α and ER β that may contribute to therapeutic resistance in breast cancer.

Objectives:

- ◆ Determine whether 27HC is an ER agonist, antagonist, or Selective Estrogen Receptor Modulator (SERM).
- ◆ Define the role of 27HC in regulating ER α activity in ER α -positive breast cancer cell lines.

Results

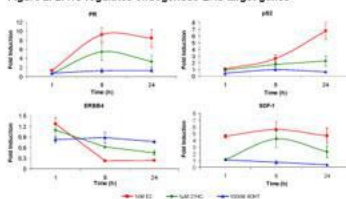
Figure 1. 27HC activates exogenous ER α and ER β



ER-negative HeLa cells were transfected with pCDNA3.1wt5-ER α or ER β , a 3xERE-TATA-luc reporter, and a CMV- β -gal transcription control for 24 hours. Cells were treated with vehicle or increasing concentrations of E2 or 27HC for 22-26 hours, then harvested and assayed for luciferase and β -gal expression. Data is presented as mean \pm SEM for three independent triplicate experiments.

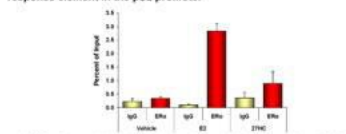
Results

Figure 2. 27HC regulates endogenous ER α target genes



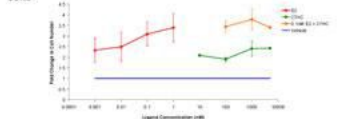
ER α -positive MCF-7 cells were plated in phenol-red free media containing 8% charcoal-stripped FBS at 2×10^6 cells/ml. After 48 hours, the cells were treated with vehicle or ligand. At the indicated time, cells were harvested for RNA isolation and ER target gene expression was analyzed by RT-PCR. Threshold cycle values were normalized to the housekeeping gene 36B4. Data was then normalized to vehicle and is presented as mean \pm SEM for three independent experiments.

Figure 3. 27HC treatment leads to recruitment of ER α at the estrogen response element in the pS2 promoter



MCF-7 cells were plated in phenol-red free media containing 8% charcoal-stripped FBS at 3.5×10^6 cells/ml. After 72 hours, the cells were treated with vehicle, 100nM E2, or 10 μ M 27HC for 45 minutes. After cross-linking DNA and protein, protein and associated chromatin was harvested and subjected to immunoprecipitation with either IgG or ER α antibody. Following immunoprecipitation, cross-linking was reversed and DNA harvested for analysis by RT-PCR. Data is presented as the percent of DNA immunoprecipitated with ER α compared to the total amount of DNA present in the input.

Figure 4. 27HC stimulates proliferation in ER α -positive breast cancer cells

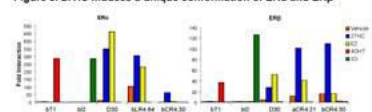


MCF-7 cells were plated in phenol-red free media containing 8% charcoal-stripped FBS at 5×10^4 cells/ml. After 48 hours, the cells were washed and the media was replaced with serum-free media for 24 hours. Cells were then treated with vehicle, E2, or 27HC for 48 hours. Treatment was replenished after 48 hours. On day 6, the increase in cell number was measured using a DNA dye. Data is presented as the mean \pm SEM for three independent triplicate experiments.



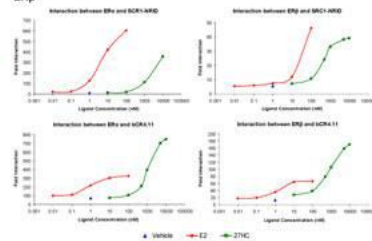
Results

Figure 5. 27HC induces a unique conformation of ER α and ER β



ER-negative HepG2 cells were transfected with ER-interacting peptides fused to Gal4 to use as conformational probes of the receptor structure: VP16-ER α or ER β , a 5xGAL4-TATA-luc reporter, and a CMV- β -gal transcription control were co-transfected with the peptides for 24 hours. Cells were subsequently treated with vehicle, 10 μ M 27HC, 100nM E2, 100nM ICI, or 100nM ICI for 22-26 hours. Cells were then harvested and assayed for luciferase and β -gal expression. Data is presented as the mean of one representative triplicate experiment.

Figure 6. 27HC allows for differential peptide recruitment to ER α and ER β



HepG2 cells were transfected with VP16-ER α or ER β , Gal4 peptide, 5xGAL4-TATA-luc reporter, and CMV- β -gal transcription control for 24 hours. Cells were subsequently treated with vehicle or increasing concentrations of 27HC or E2 for 22-26 hours. Cells were then harvested and assayed for luciferase and β -gal expression. Data is presented as the mean of one representative triplicate experiment.

Conclusions

- ◆ 27HC is a novel partial agonist that regulates both ER α and ER β .
- ◆ 27HC stimulates proliferation in an ER α -positive breast cancer cell line.
- ◆ 27HC induces a unique conformation of both ER α and ER β that allows for differential recruitment of ER-interacting peptides.

Future Directions

- ◆ Determine how 27HC influences breast tumor growth.
- ◆ Establish which cells produce 27HC within the tumor microenvironment and determine whether this ligand acts in an autocrine or paracrine manner.

Acknowledgements

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