Использование интернет-ресурсов для выяснения путей токсичности нарушаемых химическим веществом.

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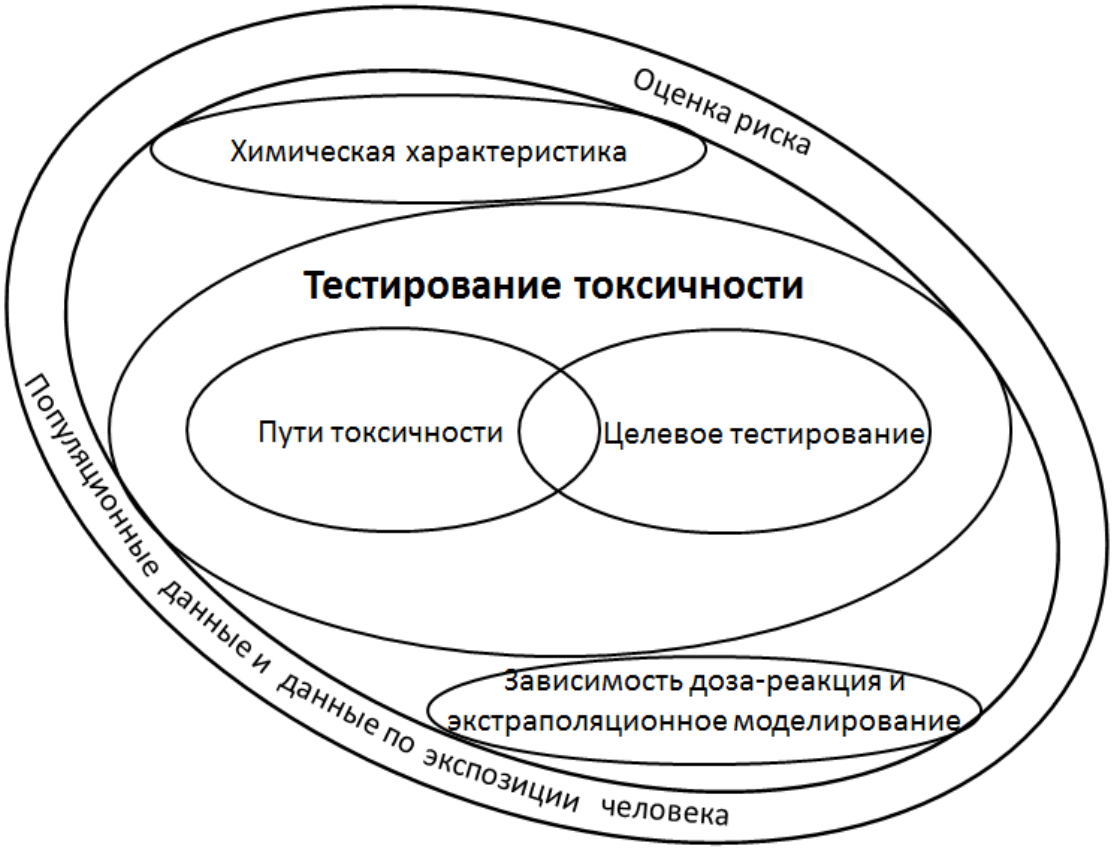
"Объединение Усилий по Обеспечению Химической Безопасности Будущего" Программа российско-американского партнерского диалога

Новая парадигма тестирования токсичности

- Компонент А: Химическая характеристика
- Компонент В: Тестирование токсичности химических соединений и метаболитов
- Компонент С: Зависимость доза-реакция и экстраполяционное моделирование
- Компонент Д: Популяционные данные и данные по экспозиции человека
- Компонент Е: Оценка риска



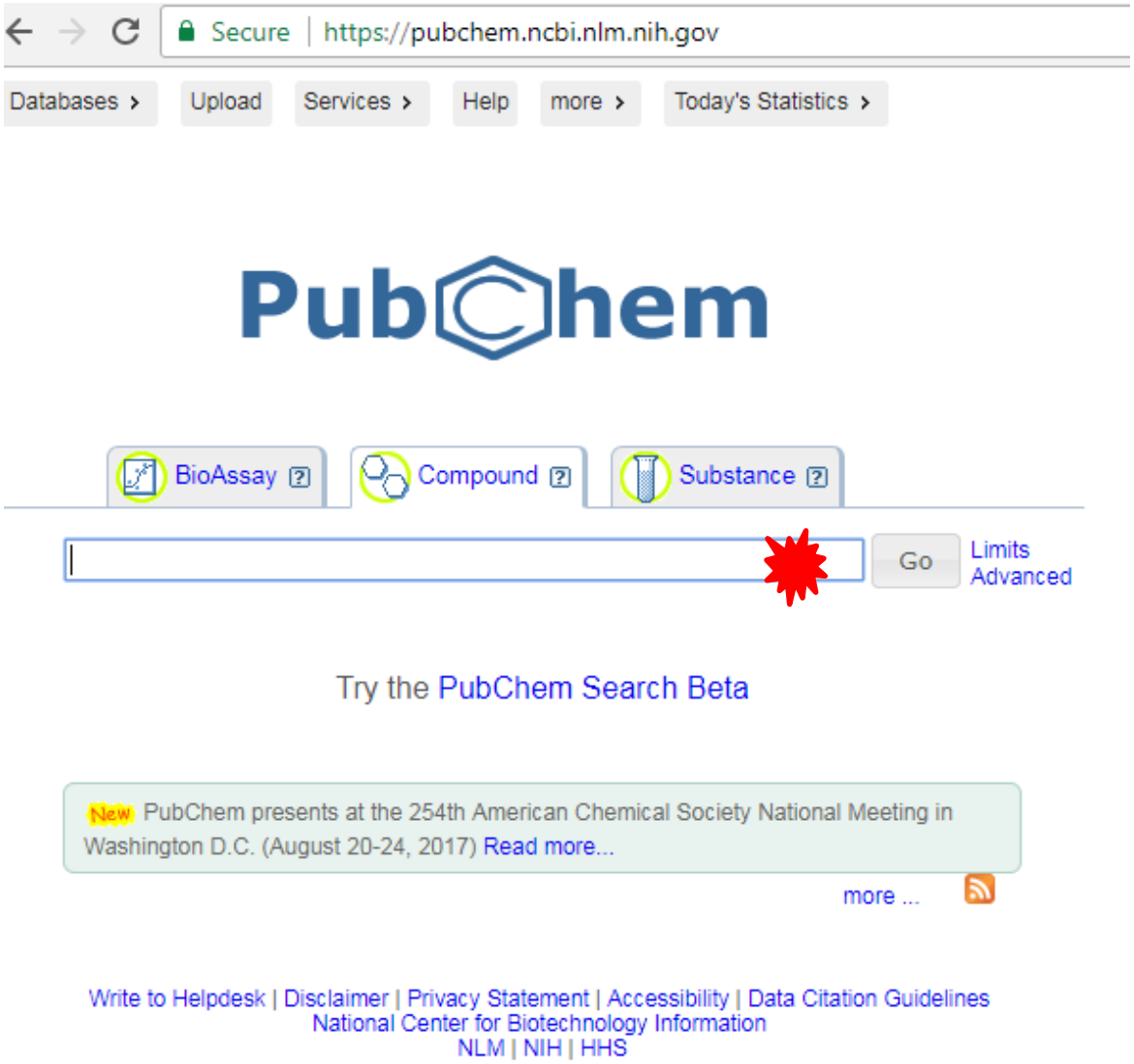
Компонент B: Тестирование токсичности химических соединений и метаболитов

- Разработка in vitro тестов, основанных на клеточных культурах человека для тестирования путей токсичности * = пути негативных исходов (AOP)
- Целенаправленное тестирование на животных для понимания нарушенных клеточных процессов на молекулярном уровне

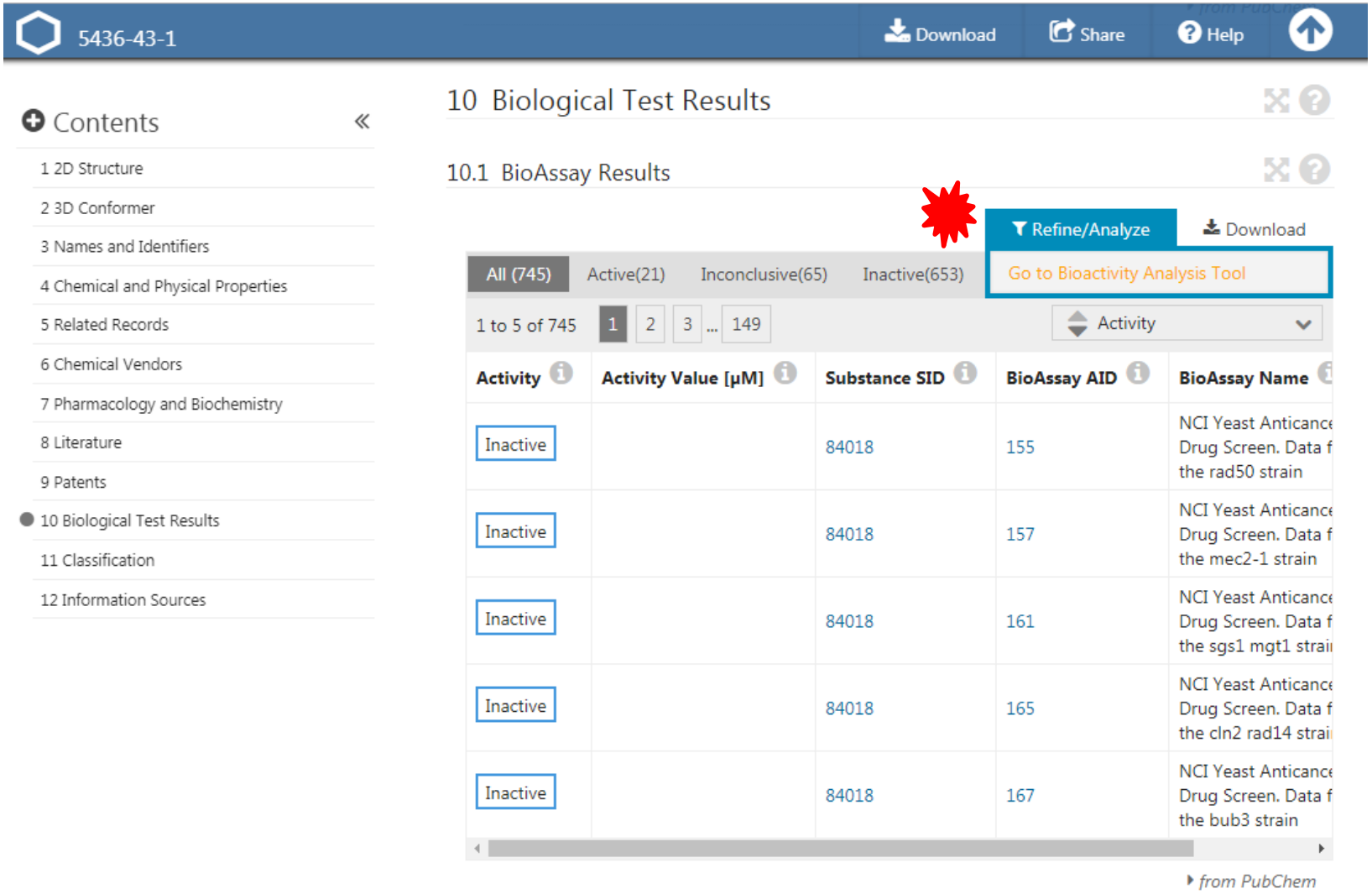
** Путь токсичности - любой нормальный клеточный путь, нарушение которого приводит к неблагоприятным последствиям для здоровья*

https://**pubchem**.ncbi.nlm.nih.gov/

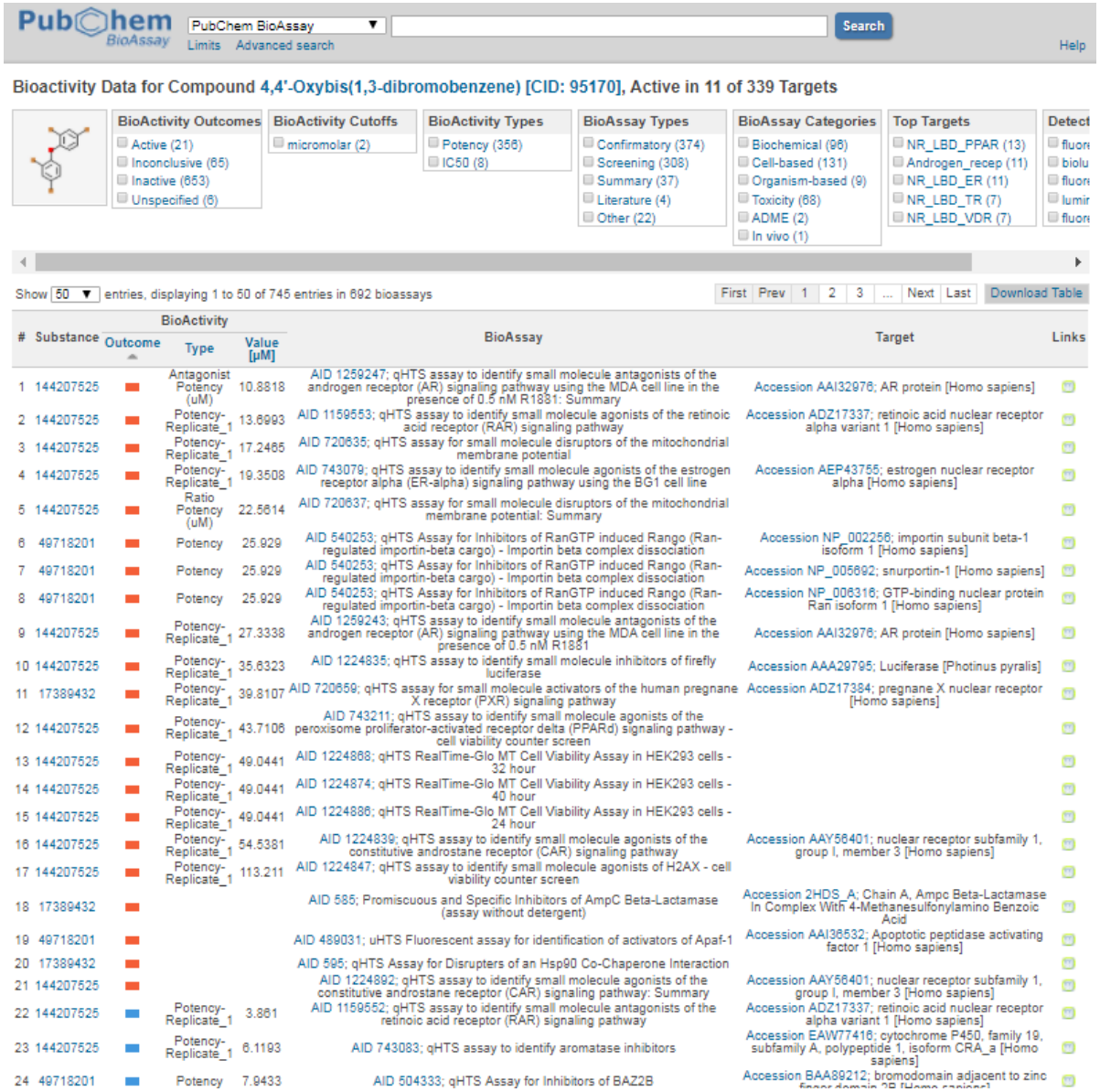
В окне поиска “compound” набрать название вещества. Клик Go



Найти параграф 10.1, выбрать ‘Refine/Analyze’ и далее ‘Go to Bioactivity Analysis Tools’



- Все биотесты отмеченные красными квадратиками в колонке "Outcome" были активированы или ингибированы Вашим веществом.



PubChem BioAssay — Limits — Advanced search — Help

Bioactivity Data for Compound 4,4'-Oxybis(1,3-dibromobenzene) [CID: 95170], Active in 11 of 339 Targets

BioActivity Outcomes: Active (21); Inconclusive (65); Inactive (653); Unspecified (6)
BioActivity Cutoffs: micromolar (2)
BioActivity Types: Potency (356); IC50 (8)
BioAssay Types: Confirmatory (374); Screening (308); Summary (37); Literature (4); Other (22)
BioAssay Categories: Biochemical (96); Cell-based (131); Organism-based (9); Toxicity (68); ADME (2); In vivo (1)
Top Targets: NR_LBD_PPAR (13); Androgen_recep (11); NR_LBD_ER (11); NR_LBD_TR (7); NR_LBD_VDR (7)

Show 50 entries, displaying 1 to 50 of 745 entries in 692 bioassays — First Prev 1 2 3 ... Next Last — Download Table

#	Substance	BioActivity Outcome	BioActivity Type	BioActivity Value [µM]	BioAssay	Target	Links
1	144207525		Antagonist Potency (uM)	10.8818	AID 1259247; qHTS assay to identify small molecule antagonists of the androgen receptor (AR) signaling pathway using the MDA cell line in the presence of 0.5 nM R1881: Summary	Accession AAI32976; AR protein [Homo sapiens]	
2	144207525		Potency-Replicate_1	13.6993	AID 1159553; qHTS assay to identify small molecule agonists of the retinoic acid receptor (RAR) signaling pathway	Accession ADZ17337; retinoic acid nuclear receptor alpha variant 1 [Homo sapiens]	
3	144207525		Potency-Replicate_1	17.2465	AID 720635; qHTS assay for small molecule disruptors of the mitochondrial membrane potential		
4	144207525		Potency-Replicate_1	19.3508	AID 743079; qHTS assay to identify small molecule agonists of the estrogen receptor alpha (ER-alpha) signaling pathway using the BG1 cell line	Accession AEP43755; estrogen nuclear receptor alpha [Homo sapiens]	
5	144207525		Ratio Potency (uM)	22.5614	AID 720637; qHTS assay for small molecule disruptors of the mitochondrial membrane potential: Summary		
6	49718201		Potency	25.929	AID 540253; qHTS Assay for Inhibitors of RanGTP induced Rango (Ran-regulated importin-beta cargo) - Importin beta complex dissociation	Accession NP_002256; importin subunit beta-1 isoform 1 [Homo sapiens]	
7	49718201		Potency	25.929	AID 540253; qHTS Assay for Inhibitors of RanGTP induced Rango (Ran-regulated importin-beta cargo) - Importin beta complex dissociation	Accession NP_005692; snurportin-1 [Homo sapiens]	
8	49718201		Potency	25.929	AID 540253; qHTS Assay for Inhibitors of RanGTP induced Rango (Ran-regulated importin-beta cargo) - Importin beta complex dissociation	Accession NP_006316; GTP-binding nuclear protein Ran isoform 1 [Homo sapiens]	
9	144207525		Potency-Replicate_1	27.3338	AID 1259243; qHTS assay to identify small molecule antagonists of the androgen receptor (AR) signaling pathway using the MDA cell line in the presence of 0.5 nM R1881	Accession AAI32976; AR protein [Homo sapiens]	
10	144207525		Potency-Replicate_1	35.6323	AID 1224835; qHTS assay to identify small molecule inhibitors of firefly luciferase	Accession AAA29795; Luciferase [Photinus pyralis]	
11	17389432		Potency-Replicate_1	39.8107	AID 720659; qHTS assay for small molecule activators of the human pregnane X receptor (PXR) signaling pathway	Accession ADZ17384; pregnane X nuclear receptor [Homo sapiens]	
12	144207525		Potency-Replicate_1	43.7106	AID 743211; qHTS assay to identify small molecule agonists of the peroxisome proliferator-activated receptor delta (PPARd) signaling pathway - cell viability counter screen		
13	144207525		Potency-Replicate_1	49.0441	AID 1224868; qHTS RealTime-Glo MT Cell Viability Assay in HEK293 cells - 32 hour		
14	144207525		Potency-Replicate_1	49.0441	AID 1224874; qHTS RealTime-Glo MT Cell Viability Assay in HEK293 cells - 40 hour		
15	144207525		Potency-Replicate_1	49.0441	AID 1224886; qHTS RealTime-Glo MT Cell Viability Assay in HEK293 cells - 24 hour		
16	144207525		Potency-Replicate_1	54.5381	AID 1224839; qHTS assay to identify small molecule agonists of the constitutive androstane receptor (CAR) signaling pathway	Accession AAY56401; nuclear receptor subfamily 1, group I, member 3 [Homo sapiens]	
17	144207525		Potency-Replicate_1	113.211	AID 1224847; qHTS assay to identify small molecule agonists of H2AX - cell viability counter screen		
18	17389432				AID 585; Promiscuous and Specific Inhibitors of AmpC Beta-Lactamase (assay without detergent)	Accession 2HDS_A; Chain A, Ampc Beta-Lactamase In Complex With 4-Methanesulfonylamino Benzoic Acid	
19	49718201				AID 489031; uHTS Fluorescent assay for identification of activators of Apaf-1	Accession AAI36532; Apoptotic peptidase activating factor 1 [Homo sapiens]	
20	17389432				AID 595; qHTS Assay for Disrupters of an Hsp90 Co-Chaperone Interaction		
21	144207525				AID 1224892; qHTS assay to identify small molecule agonists of the constitutive androstane receptor (CAR) signaling pathway: Summary	Accession AAY56401; nuclear receptor subfamily 1, group I, member 3 [Homo sapiens]	
22	144207525		Potency-Replicate_1	3.861	AID 1159552; qHTS assay to identify small molecule antagonists of the retinoic acid receptor (RAR) signaling pathway	Accession ADZ17337; retinoic acid nuclear receptor alpha variant 1 [Homo sapiens]	
23	144207525		Potency-Replicate_1	6.1193	AID 743083; qHTS assay to identify aromatase inhibitors	Accession EAW77416; cytochrome P450, family 19, subfamily A, polypeptide 1, isoform CRA_a [Homo sapiens]	
24	49718201		Potency	7.9433	AID 504333; qHTS Assay for Inhibitors of BAZ2B	Accession BAA89212; bromodomain adjacent to zinc	

- Кликая на синий номер биотеста можно найти описание биотеста.

#	Substance	BioActivity			BioAssay
		Outcome	Type	Value [µM]	
1	144207525		Antagonist Potency (uM)	10.8818	AID 1259247; qHTS assay to identify small molecule antagonists of the androgen receptor (AR) signaling pathway using the MDA cell line in the presence of 0.5 nM R1881: Summary
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3	144207525		Potency-Replicate_1	17.2465	AID 720635; qHTS assay for small molecule disruptors of the mitochondrial membrane potential
4	144207525		Potency-Replicate_1	19.3508	AID 743079; qHTS assay to identify small molecule agonists of the estrogen receptor alpha (ER-alpha) signaling pathway using the BG1 cell line

qHTS – quantitative high throughput screening - количественный тест с высокой пропускной способностью

Пример описания биотеста

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QHTS Assay To Identify Small Molecule Antagonists Of The Androgen Receptor (AR) Signaling Pathway Using The MDA Cell Line In The Presence Of 0.5 NM R1881: Summary

Cite this Record

PubChem AID:	1259247
External ID:	MDA364
Source:	Tox21
BioAssay Type:	Summary
Protein Target:	AR protein [Homo sapiens] More...
Tested Substances:	All(9667) Active(1108) Inactive(6571) Data Table
Version:	1.1 (2017-02-24) Revision History...

This bioassay record (AID 1259247) represents the assay project "**qHTS assay to identify small molecule antagonists of the androgen receptor (AR) signaling pathway using the MDA cell line in the presence of 0.5 nM R1881: Summary**", which is associated with a total of 2 additional BioAssay records in PubChem.

Пример описания биотеста