



快速、准确、高效
Fast, Accurate, High-efficiency

基于斑马鱼模型的化合物活性与毒性评价

Evaluation of Activity and Toxicity of Compounds Based on Zebrafish Models



山东省科学院斑马鱼药物筛选平台

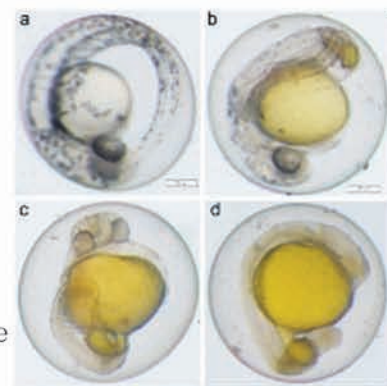
Zebrafish drug screening platform of Shandong Academy of Sciences

山东省科学院生物研究所

Biology Institute of Shandong Academy of Sciences

斑马鱼模型的优势/Advantage of Zebrafish Model

1. 样品用量少，与细胞水平相当； Small amount of sample is enough
2. 整体动物实验； Vivo animal experiment
3. 实验周期短； Short period for experiment
4. 胚胎与幼鱼透明，易观察；
Embryo and larvae are transparent and easy to observe
5. 与人类基因具有87%的相似度，筛选准确率高；
87% similarity to human in gene level, high accuracy
6. 可同时观察化合物的毒性；
Observating the toxicity of the sample in the same time
7. 高通量。 High throughout.



平台简介/Introduction to the Platform

通过与美国哈佛大学密切合作，2006年山东省科学院依托山东省科学院生物研究所建立了国内首家以斑马鱼为实验模型的药物筛选技术研发服务平台——山东省科学院斑马鱼药物筛选平台 (<http://www.drugscreen.org.cn/>)。

平台坚持以斑马鱼为特色，集科研、开发与服务于一体。平台的主要研究方向包括：构建和完善多种与人类疾病相关的转基因斑马鱼模型，建立集多种活性和毒性评价为一体的筛选系统；利用斑马鱼模型从中药材、动植物、微生物中筛选活性物质；为国内外的高等院校、科研机构和医药企业等提供化合物的活性筛选及毒性评价服务。

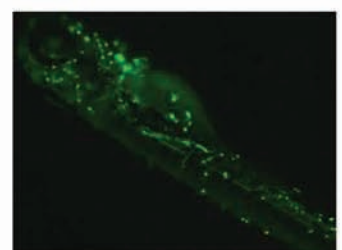
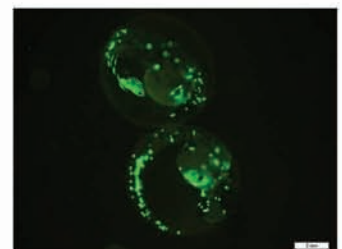
On the basis of collaboration with Harvard Medical College, Shandong Academy of Science established the first Drug Screening Platform based on zebrafish models in China in 2006.

Using zebrafish as model is the characteristic of the platform. The main research fields of the platform are: a) Constructing multiple transgenic zebrafish models for human diseases; b) Screening active compounds from natural plants, animals, and microorganism based on zebrafish models; c) Researches and developments of new medicine and health food on the basis of screening results.

The platform also provides services in activity and toxicity evaluation of compounds for universities, research institutes and pharmaceutical companies..

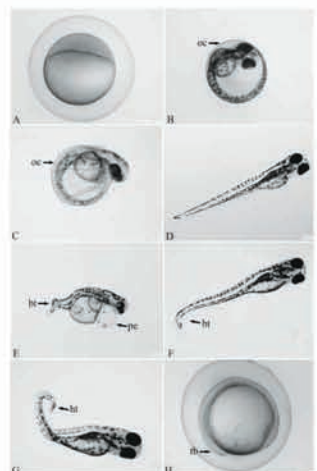
活性评价 / Activity

- ① 抑制血管生成活性 / Anti-angiogenesis
- ② 促进血管生成活性 / Pro- angiogenesis
- ③ 抑制肿瘤活性 / Anti-tumor
- ④ 诱导细胞凋亡 / Apoptosis
- ⑤ 抗氧化（衰老）活性 / Antioxidant & Anti-aging
- ⑥ 抗血栓形成活性 / Anti-thrombopoiesis
- ⑦ 抗骨质疏松活性 / Anti-osteoporosis
- ⑧ 降血糖活性 / Antidiabetics
- ⑨ 降血脂活性 / Antilipidemic
- ⑩ 抗老年痴呆活性 / Anti-Alzheimer's
- ⑪ 抗酒精性肝损伤活性 / Anti-alcoholic liver injury
- ⑫ 改善心功能活性 / Improve cardiac function
- ⑬ 改善肾功能活性 / Improve renal function
- ⑭ 抗抑郁活性 / Antidepressant
- ⑮ 促伤口愈合活性 / Promote wound healing
- ⑯ 提高免疫活性 / Improve immunity
- ⑰ 美白祛斑活性 / Skin lightening



毒性评价 / Toxicity

- ① 急性毒性 / Acute Toxicity
- ② 肝毒性 / Hepatotoxicity
- ③ 心脏毒性 / Cardiotoxicity
- ④ 肾脏毒性 / Nephrotoxicity
- ⑤ 生殖毒性 / Reproduction Toxicity
- ⑥ 发育毒性 / Developmental Toxicity
- ⑦ 神经毒性 / Neurovirulence





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