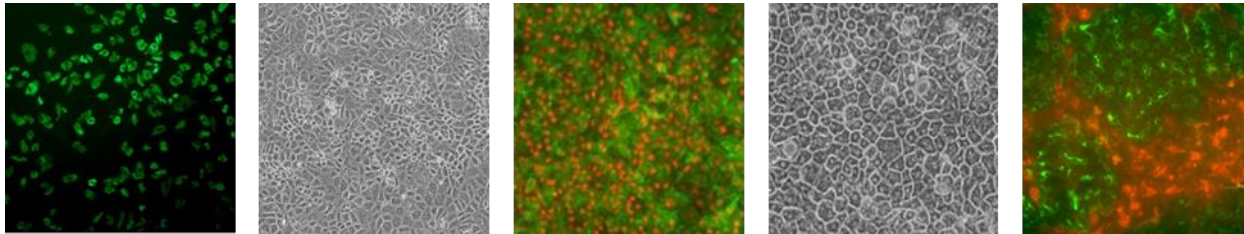


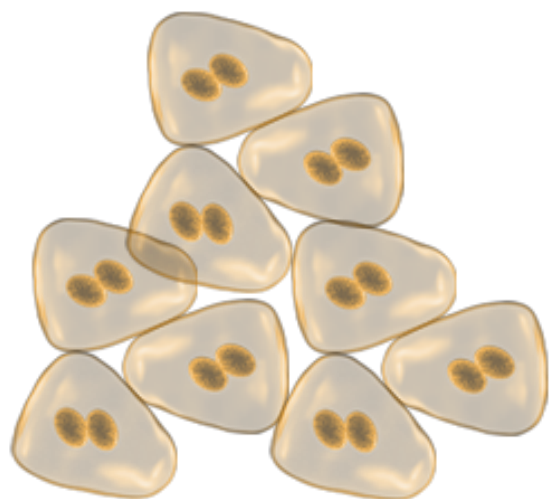
Clontech Takara cellartis



## 肝脏细胞模型专题（四） Takara 人原代肝脏细胞培养

宝日医生物技术（北京）有限公司

# 人原代肝脏细胞



人原代肝脏细胞 (hphep)  
human primary hepatocytes

## 优势

- ① 具备成熟的、典型的肝脏细胞特征；
- ② 广泛应用于ADME-Tox研究  
absorption, distribution, metabolism, excretion, toxicity

## 劣势

- ① 取材困难，供体材料有限，无法长期供应，而且不同供体差异大；
- ② 属于终端分化细胞，无法增殖培养，成本较高
- ③ 体外培养时，**活性和功能性维持时间较短**

# 人原代肝脏细胞培养

培养类型	优点	缺点	例子
2D培养	操作简便	<ul style="list-style-type: none"><li>容易去分化或丧失功能特性 (约2-7天)</li></ul>	多种
3D培养	较长时间维持功能特性 (约2周)	<ul style="list-style-type: none"><li>操作复杂</li><li>成本较高, 需要额外购买试剂或设备</li><li>并非适用于所有供体</li></ul>	<ul style="list-style-type: none"><li>3D sandwich cultures with matrix overlays (Liu <i>et al.</i> 1999)</li><li>Bioreactors (Hoffman <i>et al.</i> 2012)</li><li>3D spheroid cultures (Proctor <i>et al.</i> 2017)</li></ul>



## 理想的人原代肝脏细胞培养系统:

- 尽可能的操作简便, 无需额外的试剂或设备
- 支持长时间维持培养, 拥有更长的实验窗口
- 广泛适用于多种品牌(供体)的原代肝脏细胞

# 人原代肝脏细胞培养基



完全培养液，适用于多种品牌的原代肝脏细胞培养

操作简便：**2D培养**，隔天换液，周末免换液，可分装冻存

体外培养**4周**，保持原代肝脏细胞的存活和代谢活性

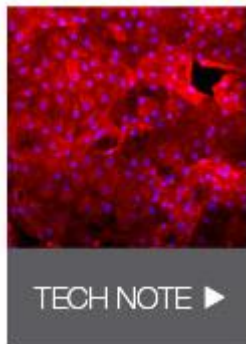
应用于：肝脏代谢疾病模型和药物ADME-Tox研究  
以及**慢性-毒性实验**和**病毒感染实验**研究

产品货号	产品名称	规格
Y20020	Cellartis® Power™ Primary HEP Medium	250 ml

Weekday	Mon	Tue	Wed	Thu	Fri	Sat	Sun	Mon
Cell culture	Medium change	—	Medium change	—	Medium change	—	—	Medium change

# 技术数据：应用于长时间维持培养

that's  
**GOOD**  
science!



## TECH NOTE

**Cellartis Power Primary HEP Medium, a novel maintenance medium, enables long-term culture of human primary hepatocytes**

**Maintain human primary hepatocyte viability and typical morphology >>**

**Support stable albumin secretion for four weeks in culture >>**

**Sustain CYP activities of human primary hepatocytes long term >>**

**Induce CYP expression in human primary hepatocytes long term >>**

全文链接：

<https://www.takarabio.com/learning-centers/stem-cell-research/stem-cell-technical-notes/long-term-human-primary-hepatocyte-culture>

## 人原代肝脏细胞培养基：支持长达28天的培养

**Power™ Primary HEP Medium:**

维持人原代肝脏细胞活力和典型形态>>

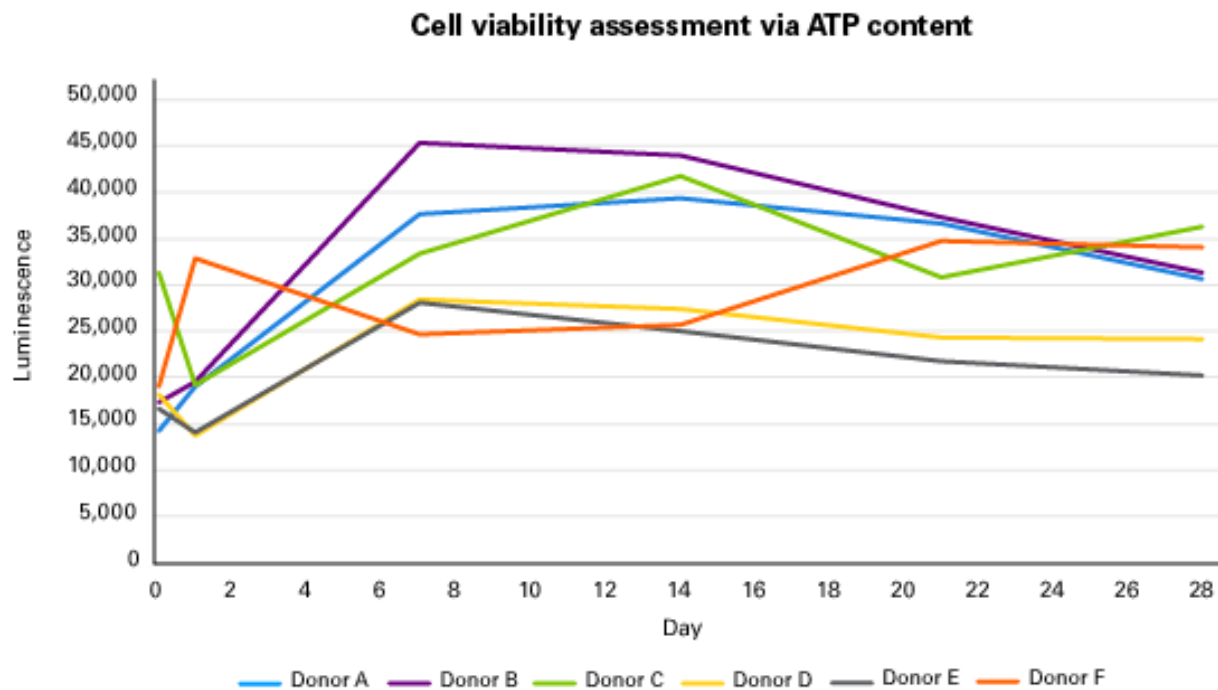
支持4周内稳定分泌白蛋白>>

长时间维持人原代肝脏细胞CYP活性>>

诱导人原代肝脏细胞长时间表达CYP表达>>

# 人原代肝脏细胞长时间维持培养

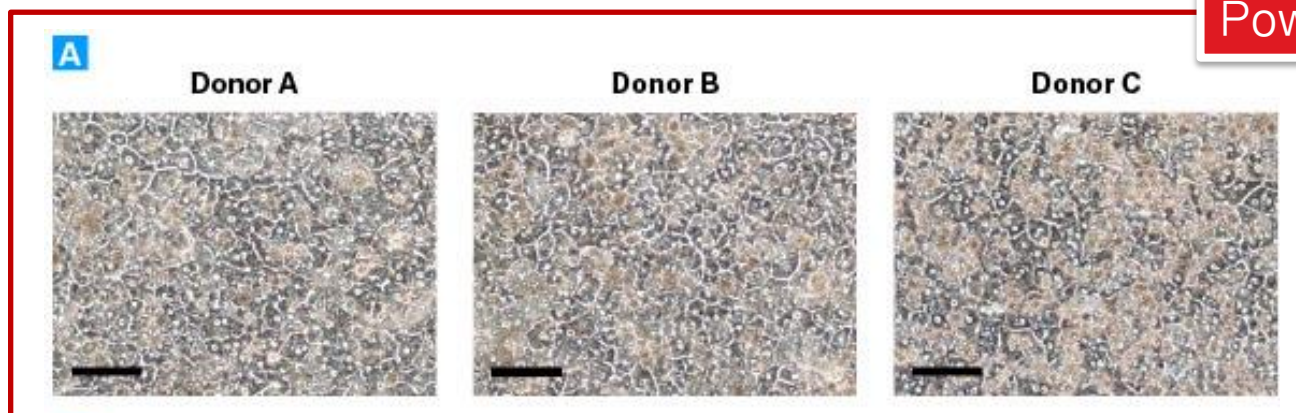
不同供体的hphep使用Power HEP medium培养，28天内持续保有细胞活力



hphep from four vendors:  
BioreclamationIVT, Lonza, Corning, Thermo Fisher Scientific

# 人原代肝脏细胞长时间维持培养

不同供体的hphep分别使用不同品牌培养基培养，仅Power HEP medium在28天仍保有原代肝脏细胞的典型形态（polygonal cell shape & bi-nucleated cells）



Power HEP medium

hphep from four vendors:  
BioreclamationIVT, Lonza,  
Corning, Thermo Fisher Scientific

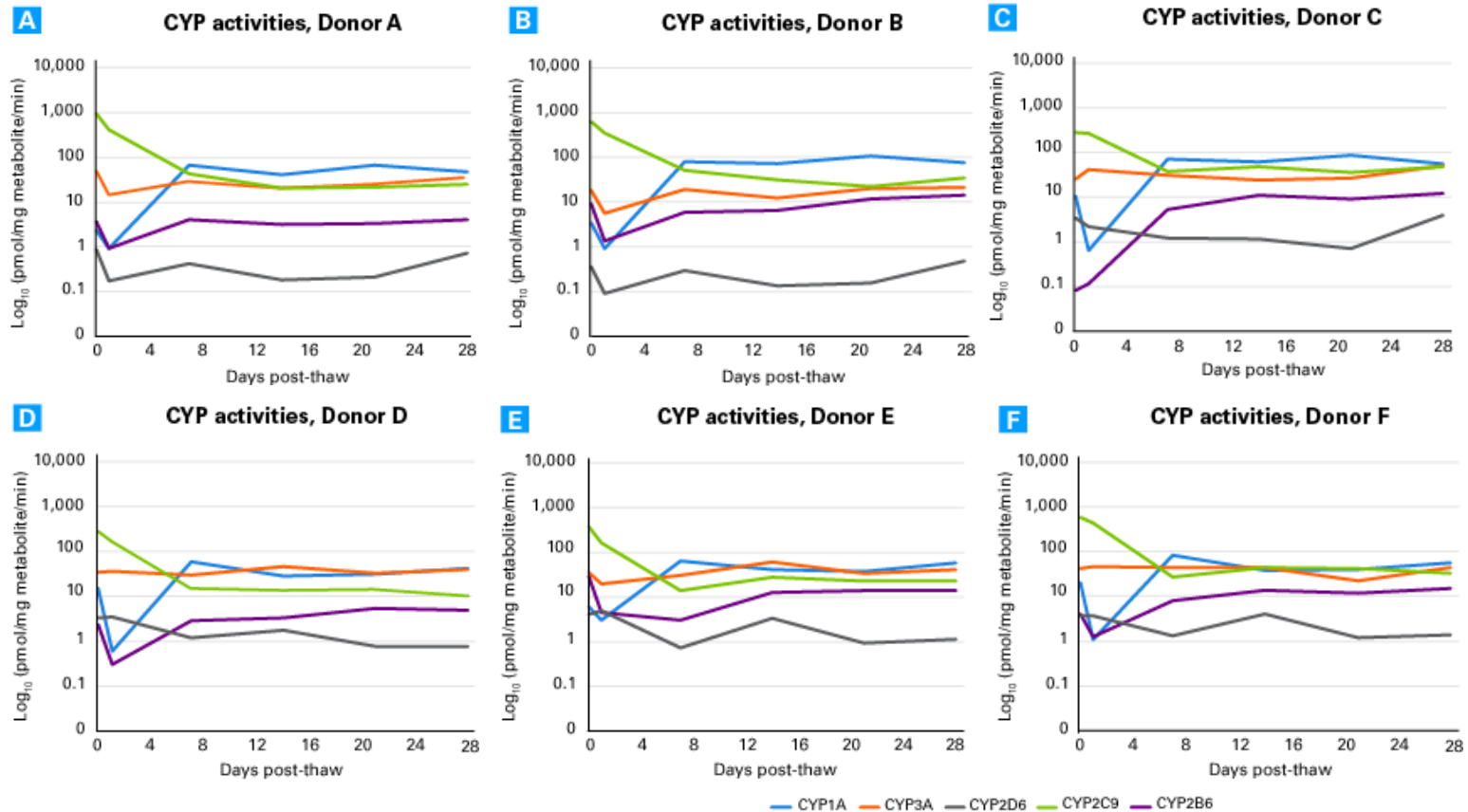


Medium from other three vendors:  
BioreclamationIVT, Thermo Fisher  
Scientific, Lonza



# 人原代肝脏细胞长时间维持培养

不同供体的hphep使用Power HEP medium培养, 28天内持续保有CYP活性

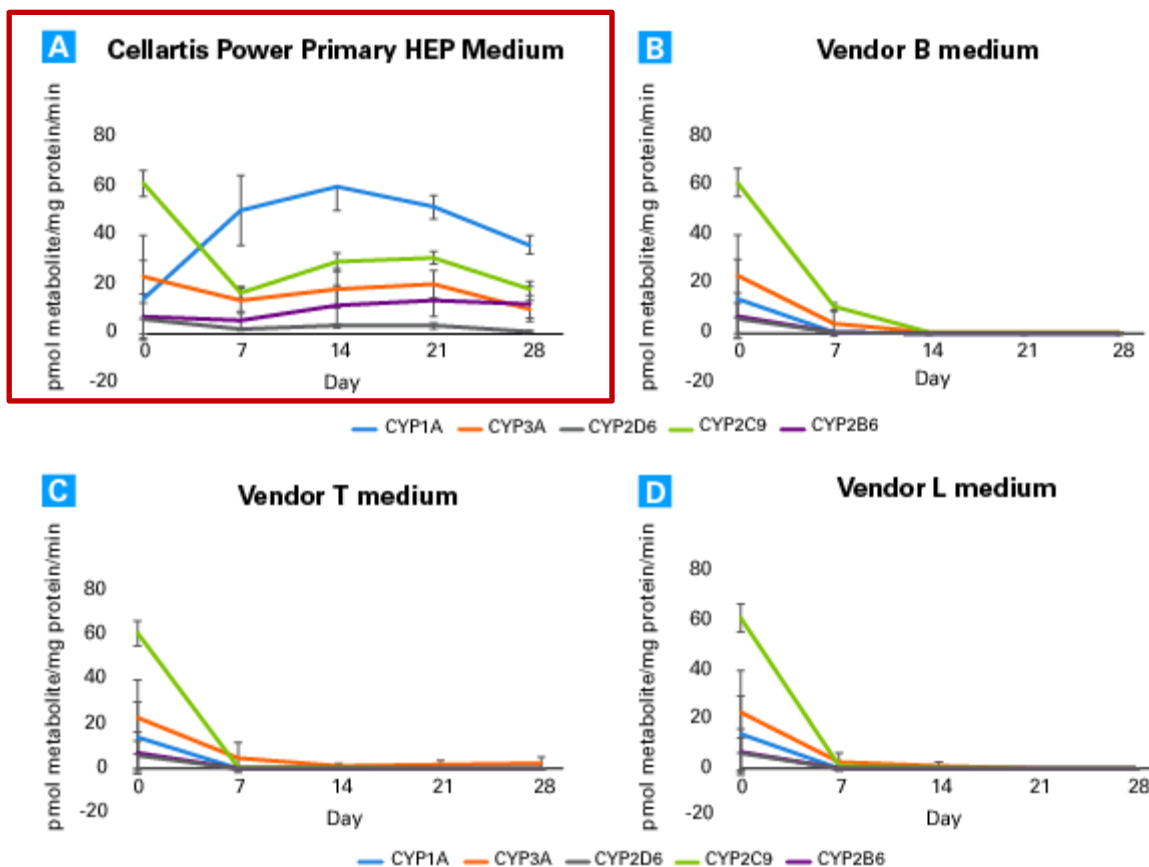


hphep from four vendors: Bioreclamation/VT, Lonza, Corning, Thermo Fisher Scientific



# 人原代肝脏细胞长时间维持培养

不同品牌培养基培养hphep，仅Power HEP medium在28天内持续保有CYP活性



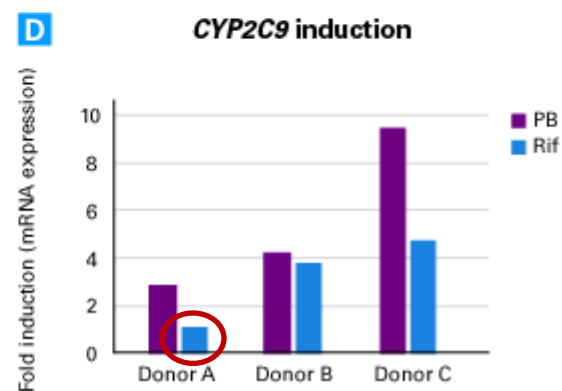
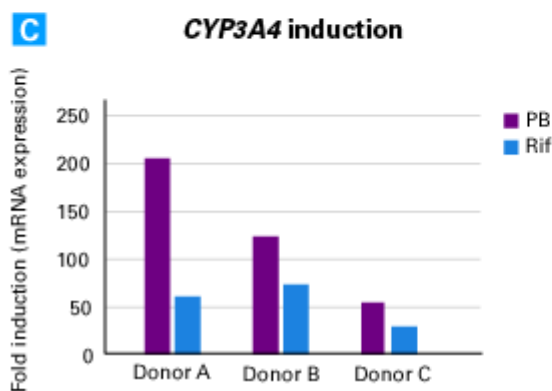
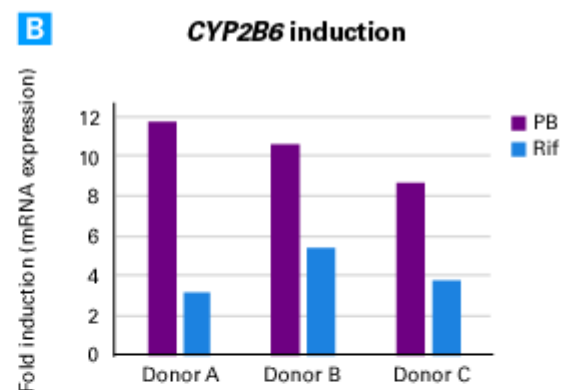
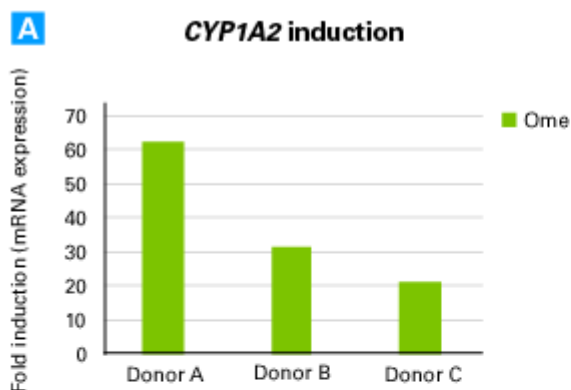
Medium from other three vendors: Bioreclamation/VT, Thermo Fisher Scientific, Lonza

# 人原代肝脏细胞长时间维持培养

使用Power HEP medium培养28天, hphep如预期显示CYP的诱导表达

Table I. Overview of CYP enzymes induced by three typical inducers.

CYP	Induced by
1A2	Omeprazole (Ome)奥美拉唑
2B6	Phenobarbital (PB)苯巴比妥, Rifampicin (Rif)利福平
2C9	Phenobarbital (PB), Rifampicin (Rif)
3A4	Phenobarbital (PB), Rifampicin (Rif)



在某些供体中,CYP2C9是不被诱导的 (Yajima et al. 2014)

# 业内评价

LONZA

“ You found the holy grail ”

Sanofi

“ The Miracle Medium ”

Pfizer

“ Magic Juice ”

Prof. Geny in University  
of Groningen

“ These are WOW results! ”

Draper Labs

“ 4 weeks with no overlay!!!! ”



that's  
**GOOD**  
science!®

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Clontech **TAKARA** cellartis