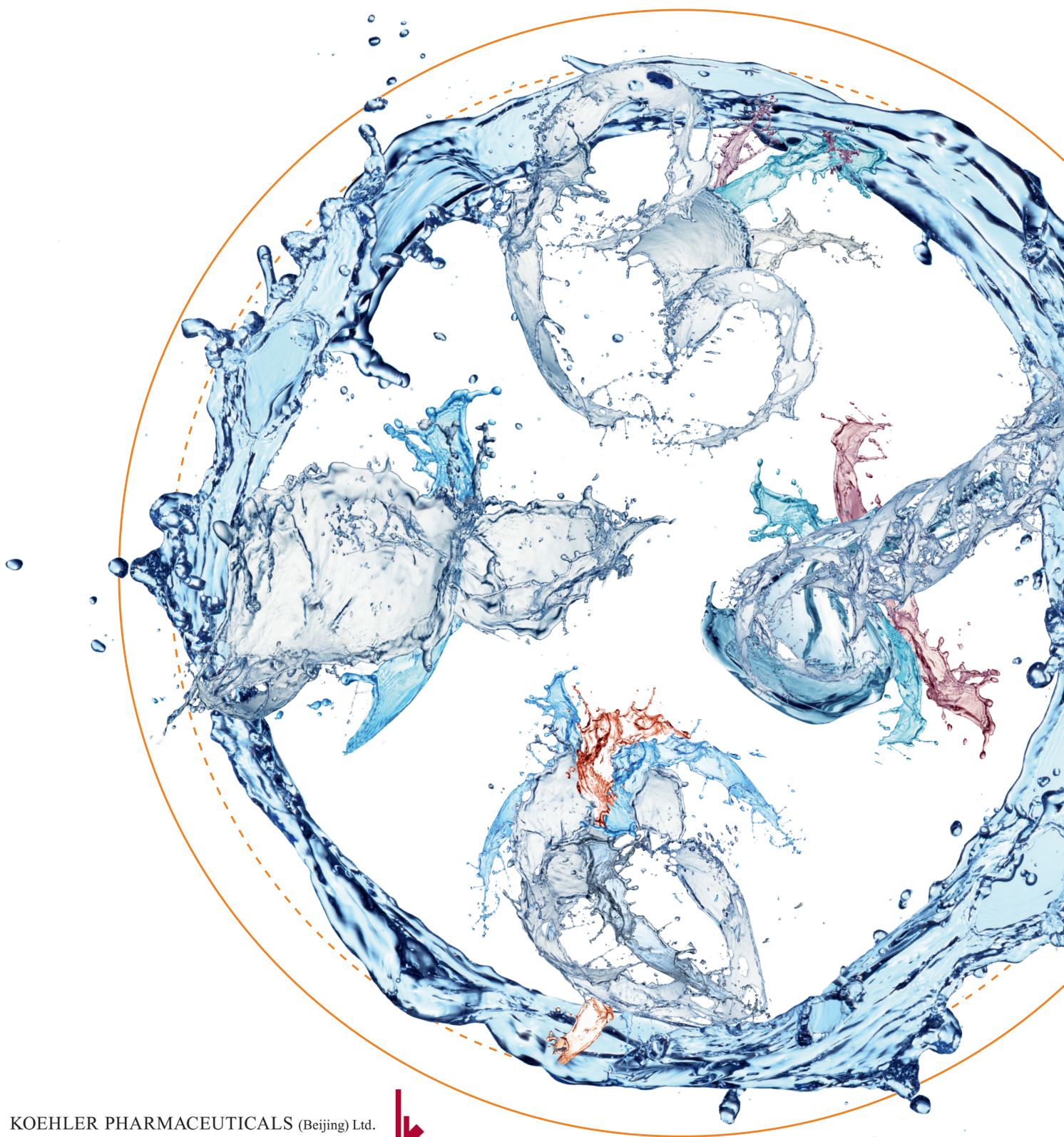


# 康思德® HTK

HTK- Bretschneider®

## 每个器官 都值得拥有最佳呵护



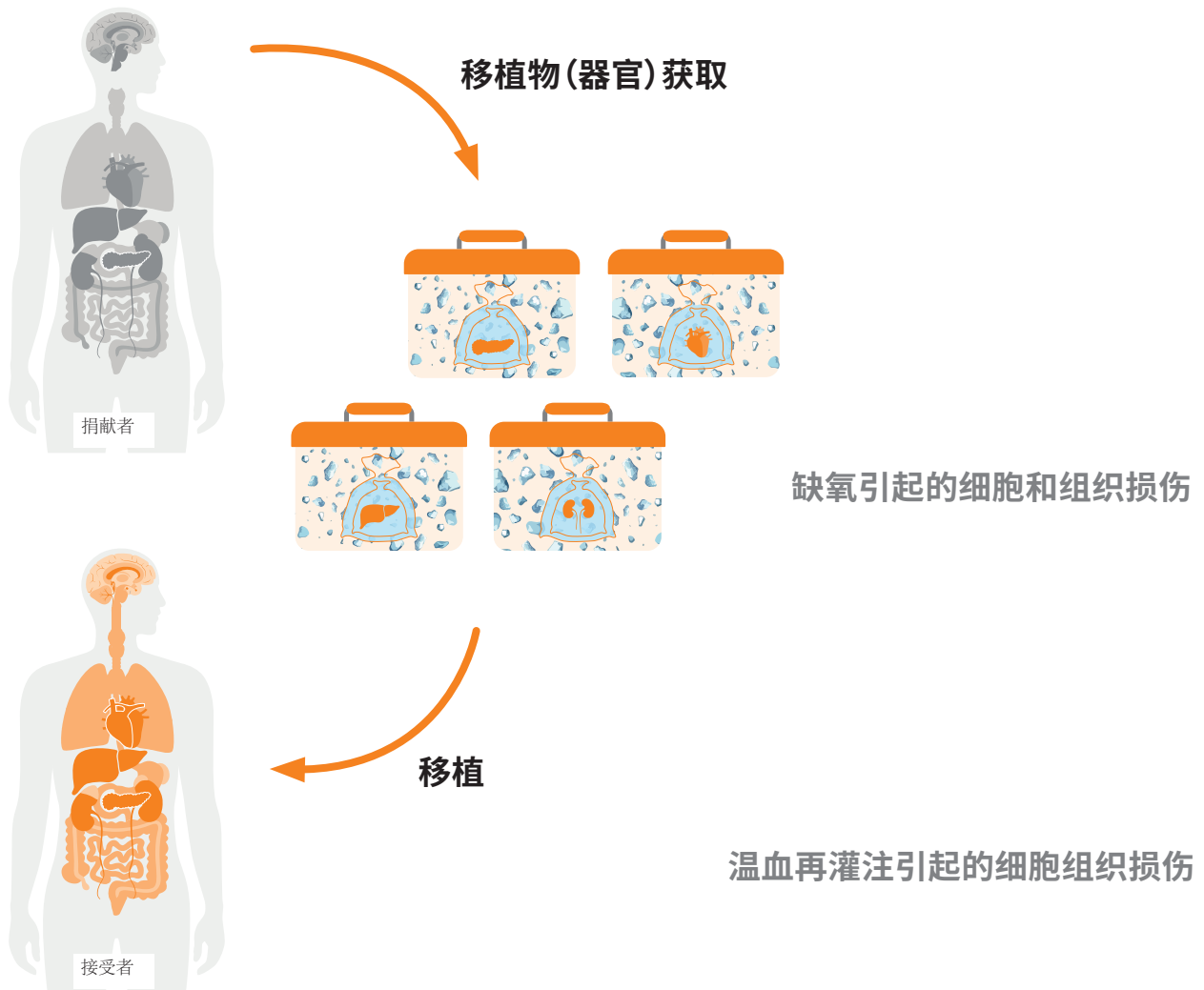
KOEHLER PHARMACEUTICALS (Beijing) Ltd.

克勒(北京)药业有限公司



## 问题:

移植过程中的缺血时间<sup>1-4</sup>



腹部移植器官(肝脏、肾脏、胰腺)的最大自然缺血耐受时间为: 20 - 60分钟<sup>5,6</sup>  
心脏为: 15 - 20分钟<sup>7</sup>

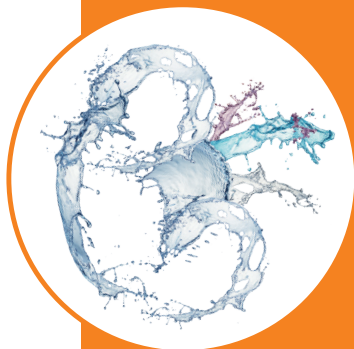
器官获取过程中需要先进的缺血保护策略

## 要求:

有效的器官保存液<sup>2,4,8-10</sup>

- 细胞内或细胞外电解质成分
- 强大的缓冲能力, 防止酸中毒
- 理想渗透压, 防止水肿形成
- 活性氧清除剂(抗氧化剂), 减轻因自由基形成导致的细胞应激和损伤
- 能量前体物质, 可促使缺血后更高水平的ATP生成并改善线粒体功能
- 彻底冲洗血液(排空血液)和代谢产物
- 便于操作(即开即用)

## 强大的器官保存功能<sup>4,25</sup>



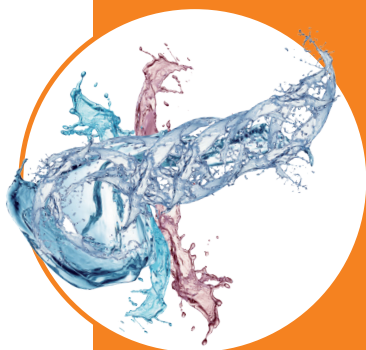
### 肾

- 安全性与有效性已获证实。<sup>26, 27</sup>
- 2023年欧洲泌尿外科协会 (EAU) 指南推荐作为肾脏保存液。<sup>28</sup>
- 在欧洲器官移植组织区域内被视为标准肾脏保存液。<sup>29</sup>
- 活体肾脏捐献中DGF发生率低。<sup>30</sup>
- 与其他灌注液相比, 肾动脉原位灌注术后AKI和血液透析的发生率更低。<sup>31</sup>



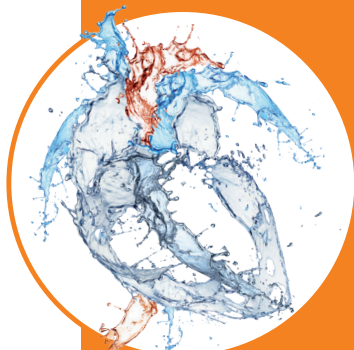
### 肝脏

- 在欧洲器官移植组织区域内为首选溶液。<sup>32, 33</sup>
- 安全性与有效性已获证实。<sup>34 - 36</sup>
- 即使长期随访, 移植物存活率仍达到最佳水平。<sup>32</sup>
- 被推荐为预防胆道并发症的保存液。<sup>25, 37, 38</sup>
- DCD肝脏的优异保存, 包括CIT>8小时的肝脏移植。<sup>39</sup>
- 低粘度和不含羟乙基淀粉 (HES) 可改善微循环灌注。<sup>40</sup>
- 被北美“最佳实践”指南推荐用于小儿肝脏保存。<sup>41</sup>
- 有效应用于成人活体肝移植且节省成本。<sup>60, 61</sup>



### 胰腺

- 被2019年第一届胰腺移植全球共识会议推荐。<sup>42</sup>
- 胰岛分离结果优异。<sup>43, 44</sup>
- 移植后前6个月内分泌功能正常。<sup>45</sup>
- 胰腺炎发生率低 (8%)。<sup>46</sup>



### 心脏

- 安全性与有效性已获证实。<sup>47-49</sup>
- 可保护心脏4h甚至更长时间。<sup>50</sup>
- 小儿心脏移植的标准保存液。<sup>51, 52</sup>
- 改善手术结果, 包括术后正性肌力评分、排斥反应评分、30天死亡率和中期生存率。<sup>53</sup>

## 解决方案：

### CUSTODIOL®

康思德®HTK器官保存溶液用于器官移植术中保存供体器官(心脏、肾脏、肝脏、胰腺)以及静脉或动脉段,可实现多器官保护。<sup>11-13</sup>

#### 组氨酸 (180mmol) <sup>10,13-16</sup>

- 强效的有机缓冲剂
- 预防细胞酸中毒
- 活性氧 (ROS) 清除剂

#### 色氨酸 (2mmol) <sup>15-18</sup>

- 稳定细胞膜
- 抗氧化剂, 保护器官免受ROS介导的损伤

#### 2-酮戊二酸 (1mmol) <sup>15,16,19</sup>

- 三羧酸循环的重要组成部分
- 缺血再灌注后重要的能量底物

#### 甘露醇 (30mmol) <sup>10,15,16</sup>

- 渗透性利尿剂 (代谢呈惰性), 防止细胞水肿
- ROS清除剂

#### “细胞内液型”<sup>8,10,16,20,21</sup>

低钠 (15mmol) 和微钙 (0.015mmol), 相对低钾 (10mmol) 和镁 (4mmol)

- 使细胞膜超极化, 阻止动作电位传导
- 显著降低器官的耗氧量

Histidine  
Tryptophan  
 $\alpha$ -Ketoglutarate

Mannitol

Sodium  
Calcium  
Potassium  
Magnesium



康思德®HTK溶液有“如水”的低粘滞度,可确保对微血管进行最佳灌注。<sup>22</sup>

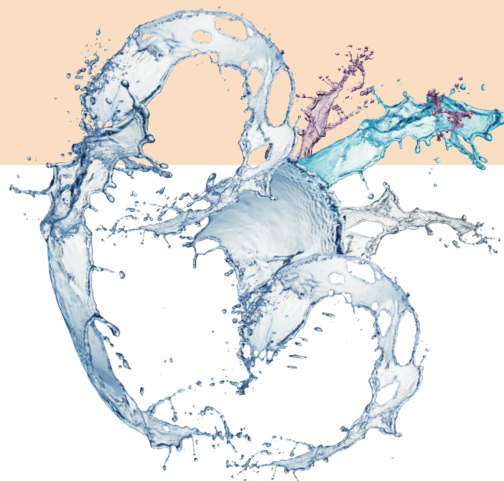
**等渗透压**可减轻细胞肿胀和水肿形成。<sup>15,23</sup>

由于其生理组成(低钾浓度),在植入前无需冲洗该溶液。<sup>2,24</sup>

➤ 能量保存、缓冲对抗酸中毒和充分灌注三者的强大组合,在器官获取、运输和移植过程中为器官提供安全有效的保护。

# 康思德® HTK

HTK- Bretschneider®



## 适应症

器官移植术中的器官保存：

灌洗及低温保存 (肾脏、肝脏、胰腺和心脏)<sup>12</sup>

- ▶ 多器官获取与保存
- ▶ 活体器官移植 (肝脏和肾脏)
- ▶ 适用于所有供体 (DBD、DCD和ECD)<sup>33,39</sup>

## 在器官获取、运输和移植过程中实现安全有效的保存



## 强大的器官保护功能<sup>4,25</sup>

- 有机缓冲系统有助于维持生理性pH值, 并降低酸中毒风险。<sup>13,15</sup>
- 甘露醇和组氨酸提供抗氧化保护。<sup>14,16</sup>
- 防止高钙血症和细胞内水肿。<sup>20, 22</sup>
- 酮戊二酸和镁确保能量供应。<sup>16,51</sup>

## 实用性与经济优势

- 不含胶体, 可快速冲洗红细胞。<sup>52</sup>
- “如水”的低粘滞度有助于溶液在循环中分布, 并能更快冷却器官。<sup>53</sup>
- 生理成分的构成, 无需额外冲洗。<sup>2, 24</sup>
- 使用方便且安全<sup>54</sup>: 无需添加其他成分。
- 使用康思德®HTK溶液进行肝脏<sup>24,55</sup>、肾脏<sup>56,57</sup>和胰腺移植<sup>27, 58, 59</sup>具有经济优势。



## 数十年信赖之选

- 全球范围内临床超过300万例手术应用。
- 超1000篇出版物中均有提及。
- 在全球许多国家获批用于器官灌洗和保存。



# CUSTODIOL®

康思德® HTK - Bretschneider®

**成分:** 1000ml溶液中含: NaCl 0.8766g(15.0mmol)、KCl 0.6710g(9.0mmol)、MgCl<sub>2</sub>·6H<sub>2</sub>O 0.8132g(4.0mmol)、组氨酸 27.9289g(180.0mmol)、组氨酸-HCl·H<sub>2</sub>O 3.7733g(18.0mmol)、色氨酸 0.4085g(2.0mmol)、甘露醇 5.4651g(30.0mmol)、CaCl<sub>2</sub>·2H<sub>2</sub>O 0.0022g(0.015mmol)、L-酮戊二酸-氢-钾 0.1842g(1.0mmol)、氢氧化钾溶液、注射用水。

**适应症:** 心脏外科手术中的心脏停搏、缺血手术中的器官原位保护(心脏、肾脏、肝脏)、器官移植手术中的供体保存(心脏、肾脏、肝脏、胰腺),以及静脉或动脉节段、多器官保护。

**禁忌症:** 对有效成分或任何辅料过敏。

**贮藏与运输:** 康思德®HTK溶液需避光冷藏(2°C-8°C)。如产品储存不当,组氨酸和酮戊二酸两种成分会转化为米基莫平,这可能会阻断血管紧张素II受体,从而导致血压下降。

**警告:** 康思德®HTK溶液不适用于全身静脉或动脉内输注,而仅用于相关器官的选择性灌注,以及从供体到接受者的运输途中供体器官的表面冷却和保存。因此,康思德®HTK溶液不得用于全身输注。

**包装规格:** 500ml/瓶、1000ml/袋、2000ml/袋。

**制造商:** Dr. Franz Köhler Chemie GmbH, Werner-von-Siemens-Str. 14-28, 64625本斯海姆,德国。2024年9月

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