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Sildenafil Enables Efficient, Single-Day Hematopoietic Stem Cell Mobilization

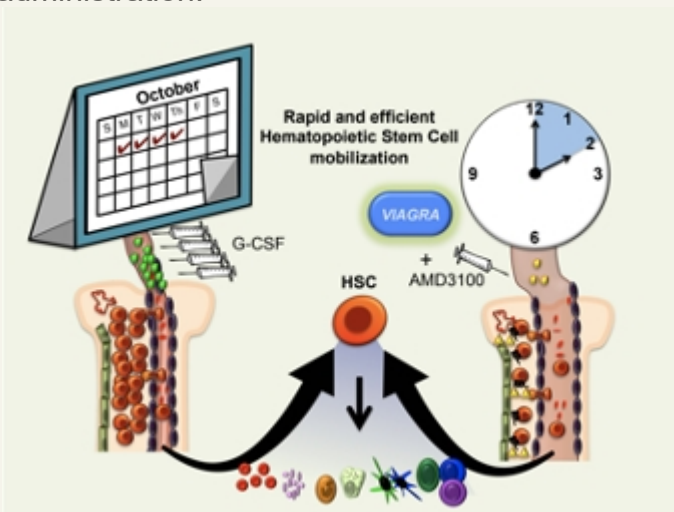
Tech ID: 33017 / UC Case 2018-904-0

BACKGROUND

Although hematopoietic stem cells (HSCs) are useful in a variety of treatments, HSC donation is a difficult procedure. The original transplantation is commonly extracted from the bone marrow manually, a long and potentially painful procedure. Other techniques for mobilizing HSC to the bloodstream involve a 5-day regimen of G-CSF treatment, that has significant side effects of fatigue, nausea, and bone pain. UC Santa Cruz researchers developed a treatment that allows collection of HSC from blood in a 2-hour treatment using already FDA-approved drugs. This makes both the cost and overall comfort of patient donating HSC's significantly easier.

TECHNOLOGY DESCRIPTION

One oral dose of sildenafil (trade name Viagra) in conjunction with a single injection of AMD3100 antagonist drives hematopoietic stem cells (HSC) from the bone marrow to the bloodstream. UC Santa Cruz researchers developed a treatment involving a single dose of sildenafil which can be used to mobilize HSC from the bone marrow. The sildenafil can be administered in conjunction with an AMD3100 injection that also promotes HSC mobilization to the bloodstream. Peak activity occurs 2 hours post-oral administration.



APPLICATIONS

- ▶ Hematopoietic cell therapies
- ▶ Hematopoietic stem cells

ADVANTAGES

- ▶ Combined therapy only takes 2 hours
- ▶ Allows HSC to be collected from bloodstream
- ▶ Cost effective

INTELLECTUAL PROPERTY INFORMATION

Country	Type	Number	Dated	Case
United States Of America	Published Application	20210100848	04/08/2021	2018-904

RELATED MATERIALS

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OTHER INFORMATION

KEYWORDS

hematopoietic stem cells, stem cell

transplant, sildenafil - new use,

Viagra (R) - new use

CATEGORIZED AS

- ▶ **Medical**
 - ▶ Delivery Systems
 - ▶ Stem Cell

RELATED CASES

2018-904-0

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