Novel non-vascular stent: Economical, removable and selfexpandable

EXECUTIVE SUMMARY

CSIR-NCL has developed a new class of self-expandable stents based on a novel scroll design. It is made of simple polymer-metal composites which meet the characteristics of commercially available shape memory alloy-based stents. Developed stents are 10-20 times economical as compared to commercial ones. Completed corrosion, abrasion, radio-opacity test & biocompatibility studies (As per ISO 10993 protocols)

BACKGROUND

- Two kinds of stents are used extensively in the treatment of numerous biliary tract diseases
- Plastic stents: Removable & economical, but non-expandable & gets clogged (lower patency)
- Self-expanding plastic stents (SEPS) are 6-10 times costlier than plastic ones
- Self-expanding metallic stents (SEMS)- selfexpandable, longer patency but Non-removable and not affordable because of expensive raw material (nitinol) & manufacturing process
- There is a pressing need for low-cost stents which offers features of self-expandable metal stents

TECHNOLOGY KEY FEATURES

 CSIR-NCL has developed a new class of selfexpandable stents with novel scroll design

Key Features

- Economical: 10-20 times lower in price
- Removable & self-expandable: In vitro study
- Longer patency: Expected to be similar to the available self-expanding stents
- Raw material: Polymeric-metal composite
- Process: Compression molding

MARKET POTENTIAL

■ The global non-vascular stents market is expected to reach 1350 mil US\$ (2018-2025) with a CAGR of 4.7%¹

VALUE PROPOSITION

- <u>Cost-effective</u>: 10-20 times economical as compared to commercially available
- Affordable materials & simple manufacturing process
- Self-expandable with a novel design
- Meet the characteristics of commercial shape memory alloy-based stent
- IP protection with multiple patents

APPLICATIONS

 Stents for the GI tract: Primarily for esophagus; can be extended to other regions

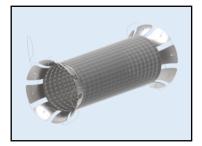
TECHNOLOGY STATUS

- Technology & patents are available for licensing`
- A platform design is optimized for the esophageal region; can be extended to other regions
- Successfully completed corrosion, abrasion, radio-opacity test & biocompatibility studies (As per ISO 10993 protocols)
- <u>Patents</u>: IN2463/DEL/2015, W02017081704, US20180369003, EP3373866

REFERENCES

1. Global Non-Vascular Stents Market Outlook 2018-2025 : Industry Trends, Analysis, Opportunities, Sales, Segmentation, Revenue and Forecast

(https://www.reportsbuzz.com/62044/global-non-vascular-stents-market-outlook-2018-2025/)





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