Retrospective Study

Highly accurate colorectal cancer prediction model based on Raman spectroscopy using patient serum

Ito H *et al*. Highly accurate colorectal cancer prediction model

Hiroaki Ito, Naoyuki Uragami, Tomokazu Miyazaki, William Yang, Kenji Issha, Kai Matsuo, Satoshi Kimura, Yuji Arai, Hiromasa Tokunaga, Saiko Okada, Machiko Kawamura, Noboru Yokoyama, Miki Kushima, Haruhiro Inoue, Takashi Fukagai, Yumi Kamijo

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May 26, 2020 · The test was able to accurately rule out **cancer** with a negative predictive value of 98.0%. This performance could reduce the number of invasive diagnostic procedures in the cohort by at least 47%. Collectively, our findings promote a novel, non-invasive solution to triage CRC referrals with potential to reduce **patient** anxiety, accelerate access ...

[PDF] A new method to triage colorectal cancer referrals in the ...

https://www.medrxiv.org/content/10.1101/2020.05.20.20108209v1.full.pdf

May 20, 2020 · diagnosis (CRC or control) was used to develop the **Raman-CRC blood test model**. **Patients** were age and sex matched where possible (Table 1). Serum samples from the cohort were analysed **using** a **HT Raman** platform to provide 5 biological repeat spectra from each **patient**. In total this provided 500 spectra (250 CRC; 250 control) for analysis.

Author: Cerys A Jenkins, Susan Chandler, Rh...　　**Publish Year:** 2020

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Author: Cerys A Jenkins, Susan Chandler, Rhys ...   **Publish Year:** 2020

Serum Raman spectroscopy as a diagnostic tool in patients ...
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Given all this, we sought to investigate whether we could use recent advances in techniques **based on** **Raman** scattering to develop a new **serum** biomarker approach in patients with HD. 13 Spontaneous **Raman Spectroscopy** (RS), in particular, is increasingly being researched for applications in medical diagnostics **using** biofluids, cell and tissue ...

Label-free surface-enhanced Raman spectroscopy for ...
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4574674
Sep 01, 2015 · Abstract. **Fecal based tests** have limited diagnostic values in detecting adenomatous polyps, the precursor lesions to **colorectal cancer** (CRC). **Surface enhanced Raman spectroscopy** (SERS) **using** silver nanoparticles as substrate is a multiplexed analytical technique capable of detecting biomolecules with **high sensitivity**.
Cited by: 26   **Author:** Shangyuan Feng, Wenbo Wang, Isabella T. ...
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A high-throughput serum Raman spectroscopy platform and ...
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The **HT Raman methods** were tested on a pilot dataset of serum from 30 **cancer patients** and 30

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May 20, 2020 · diagnosis (CRC or control) was used to develop the **Raman-CRC blood test model**. **Patients** were age and sex matched where possible (Table 1). Serum samples from the cohort were analysed **using** a HT **Raman** platform to provide 5 biological repeat spectra from each **patient**. In total this provided 500 spectra (250 CRC; 250 control) for analysis.

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Label-free surface-enhanced Raman spectroscopy for …

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Label-free blood serum detection by using surface-enhanced …

https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4595250

Lin D, Feng S, Pan J, Chen Y, Lin J, Chen G, Xie S, Zeng H, Chen R. **Colorectal cancer** detection by gold nanoparticle **based** surface-enhanced **Raman spectroscopy** of blood **serum** and statistical analysis. Optics Express. 2011; 19:13565–13577. doi: 10.1364/OE.19.013565.

Cited by: 24   **Author:** Bing Yan, Bo Li, Zhining Wen, Xianyang …
Publish Year: 2015

A high-throughput serum Raman spectroscopy platform and …

https://pubs.rsc.org/en/content/articlehtml/2018/an/c8an01323c ▾

The **HT Raman methods** were tested on a pilot dataset of serum from 30 **cancer patients** and 30 **matched control patients using** statistical analysis via cross-validated **PLS-DA** with a maximum achieved a sensitivity of 83% and specificity of 83% for **detecting colorectal cancer**. 1 Introduction

Cited by: 9   **Author:** Cerys A. Jenkins, Rhys A. Jenkins, Meleri …