



Portfolio of human colorectal adenocarcinomas

A portfolio of human colorectal adenocarcinoma cell lines including primary cell lines isolated from patients (of various Duke's stages and histological grades) in addition to cloned cells lines genetically modified to highly express alpha integrin domains.

Technology overview

Primary

Six cell lines from primary human colorectal adenocarcinomas were established from surgical specimens without the use of 'feeder' cells, 'conditioned' medium or passage of cells in nude mice. The six cell lines exhibit considerable variation in morphology, CEA secretion and tumourigenicity in nude mice. At least two of the lines retain some of the differentiated characteristics of colorectal epithelium. HRA-19 has stem cell properties and undergoes a multilineage differentiation in serum free medium.

Cell Line	Site	Duke's stage	Patient age	Patient sex	Histological grade	CEA secretion ng/ml
HCA-2	Sigmoid colon	C	83	F	Well differentiated	490
HCA-7	Colon	B	58	F	Moderately differentiated	100
HCA-24	Ascending colon	B	68	M	Well differentiated	34
HCA-46	Sigmoid colon	C	53	F	Poorly differentiated	210
HRA-16	Rectum	B	56	M	Moderately differentiated	80
HRA-19	Rectum	B	66	M	Well differentiated	None detected

Source: S C Kirkland and I G Bailey (1986) Establishment and characterisation of six human colorectal adenocarcinoma cell lines, Br J Cancer 53; 779-85

Clonal

HRA-19a1.1 is a clone derived from HRA-19. The HRA-19a1.1 cell line was transfected with alpha integrin domain coding plasmids to create cell lines highly expressing alpha2 or alpha2 and alpha 1 integrin. In experiments, cell lines expressing alpha2 showed a significantly increased endocrine and mucous cell lineage commitment relative to the parent cell line.

Cell Line	Source	Genetic modification
HRA-19a1.1	Clone of HRA-19	None
HRA-19a1.1 Alpha2 B	Derived from HRA-19a1.1	Expresses $\alpha 2$ integrin
HRA-19a1.1 Alpha2 F	Derived from HRA-19a1.1	Expresses $\alpha 2$ integrin
HRA-19a1.1 Alpha2Alpha1 B	Derived from HRA-19a1.1	Expresses $\alpha 2 + \alpha 1$ integrin

These cell lines are available through [Public Health England ECACC](#). Please make your purchase through the links below.

www.imperial.ac.uk/enterprise

Target market

Industrial or academic R&D groups working in adenocarcinoma drug development.

Benefits

- Cell lines are invaluable tools for biomedical research.
- Cancer cell lines are the foundation of cancer biology and the quest for drug treatments.
- Adenocarcinoma is a cancer of the epithelium (including colon) and originates in glandular tissue, such as skin surface layer and glands.

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Purchasing links through PHE

- 🔗 [HCA 7 \(Human Colon Adenocarcinoma\)](#)
- 🔗 [HCA 2 \(Human sigmoid colon adenocarcinoma\)](#)
- 🔗 [HCA 24 \(Human colon adenocarcinoma\)](#)
- 🔗 [HCA 46 \(Human colon adenocarcinoma\)](#)
- 🔗 [HRA 16 \(Human rectal adenocarcinoma\)](#)
- 🔗 [HRA 19 \(Human colorectal adenocarcinoma\)](#)
- 🔗 [HRA 19a1.1 \(Human colorectal adenocarcinoma\)](#)
- 🔗 [HRA 19a1.1 Alpha2Alpha1 B \(Human colorectal adenocarcinoma\)](#)
- 🔗 [HRA-19a1.1 Alpha2 B \(Human colorectal adenocarcinoma\)](#)
- 🔗 [HRA-19a1.1 Alpha2 F \(Human colorectal adenocarcinoma\)](#)

Link to published paper(s)

S C Kirkland and H Ying (2008) *$\alpha 2\beta 1$ Integrin regulates lineage commitment in multipotent human colorectal cancer cells*, J Biol Chem, 283(41): 27612-27619.

Inventor information

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