

Human colorectal cancer cells express multiple ZNF292 circular RNAs

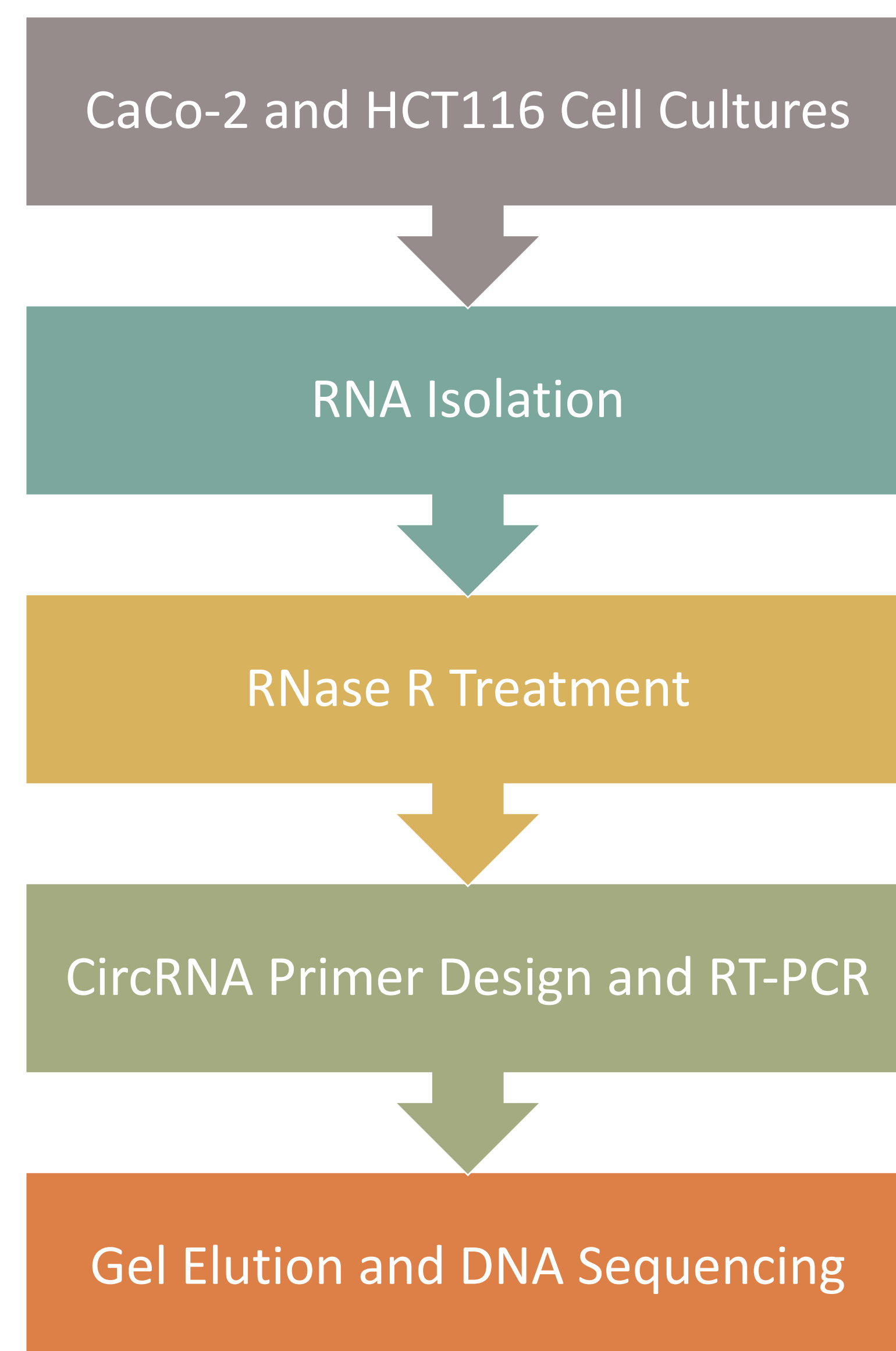
PRESENTER

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PURPOSE

Within the United States, colorectal cancer ranks as the third-leading cause of mortality amongst deaths caused by cancer. ZNF292 encodes a zinc finger protein that regulates both growth hormone expression and tumor formation. ZNF292 has been shown in humans to produce an abundance of circular RNA (circRNA) in endothelial and cancer cells. Little is known about the role of circRNA in cancer, but certain circRNAs appear to be overexpressed under hypoxic conditions.

METHODS



RESULTS

We identified that human ZNF292 in CaCo-2 colorectal cancer cell lines does produce circular RNA as well as linear mRNA.

The linear forms are removed by RNase R treatment, as predicted, while the circular forms remain, even with different primer sets.

Product bands from the gel elution are being sequenced to determine which exons are present and in which form.

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hZNF292	start	stop	size (nt)
Exon 1	1	195	194
Exon 1A	196	342	146
Exon 2	343	497	154
Exon 3	739	817	78
Exon 4	818	953	135
Exon 5	954	1156	202
Exon 6	1157	1293	136
Exon 7	1294	1435	141

Primers used

human linear ZNF292		reference
ZLH292-F1	GCAAAGCTGTGTTCTGACCA	Boeckel et al, Circulation Research 2015
ZLH292-R1	CTTGTGGAGCTGACGTGAC	
human circ ZNF292		
ZCH292-F1	GCTCAAGAGACTGGGGTGTG	Boeckel et al, Circulation Research 2015
ZCH292-R1	AGTGTGTGTTCTGGGGCAAG	
ZCH292-F2	GATGGAGAATGGCAGCTGTG	Wei et al., AmJTR 2019; hsa_circ_403658
ZCH292-R2	AGCCACTGTGTATACCTCA	
ZCH292-F3	ACTGTGTCTGCCTGTGAGT	Bancroft et al., this paper
ZCH292-R3	GCGTCCAGAACCAAGGCTA	
ZCH292-F4	TCAAGAGACTGGGGTGTGGA	Bancroft et al., this paper
ZCH292-R4	ACTCAACAGGCAGACACAGT	

AUTHORS

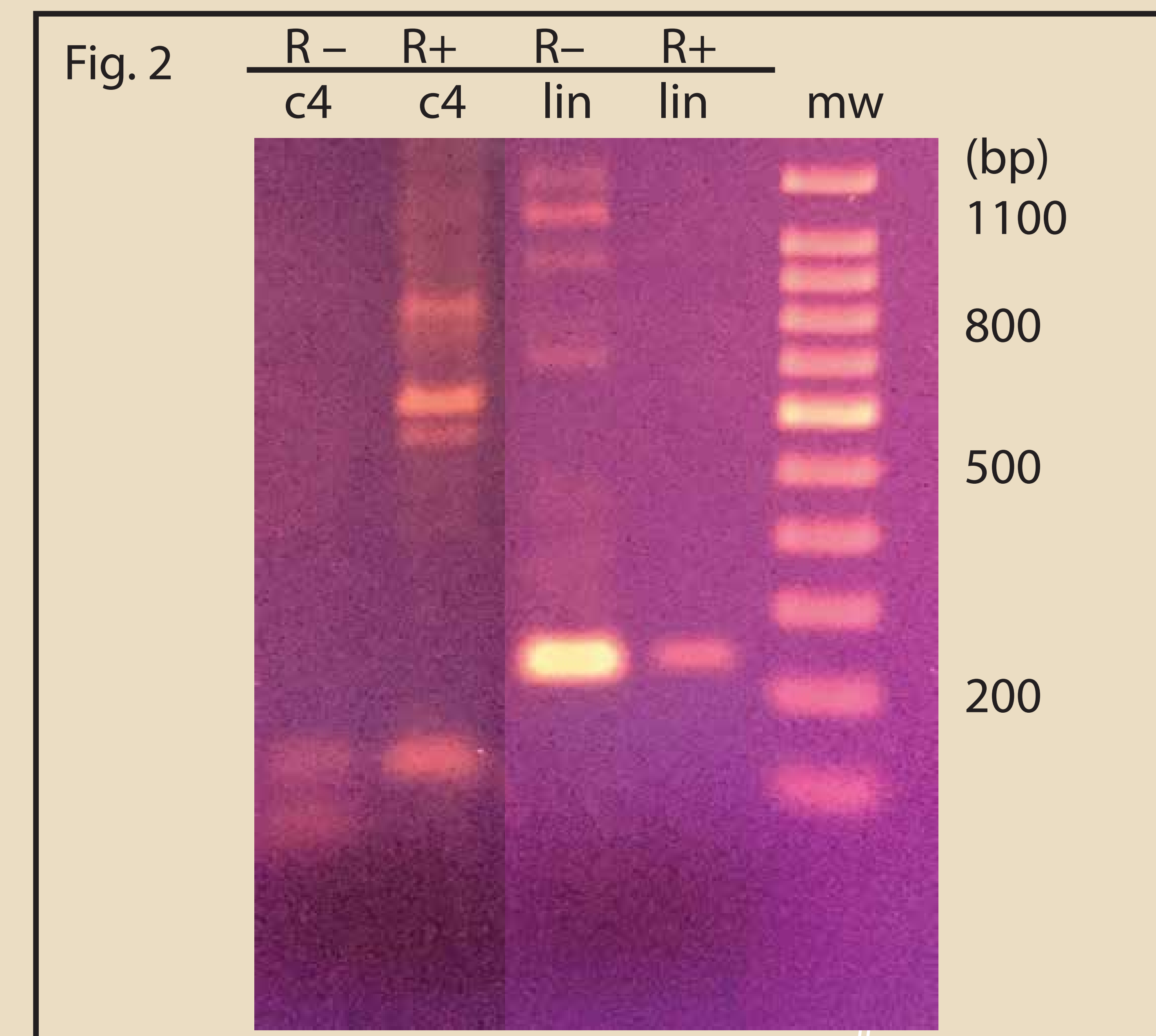
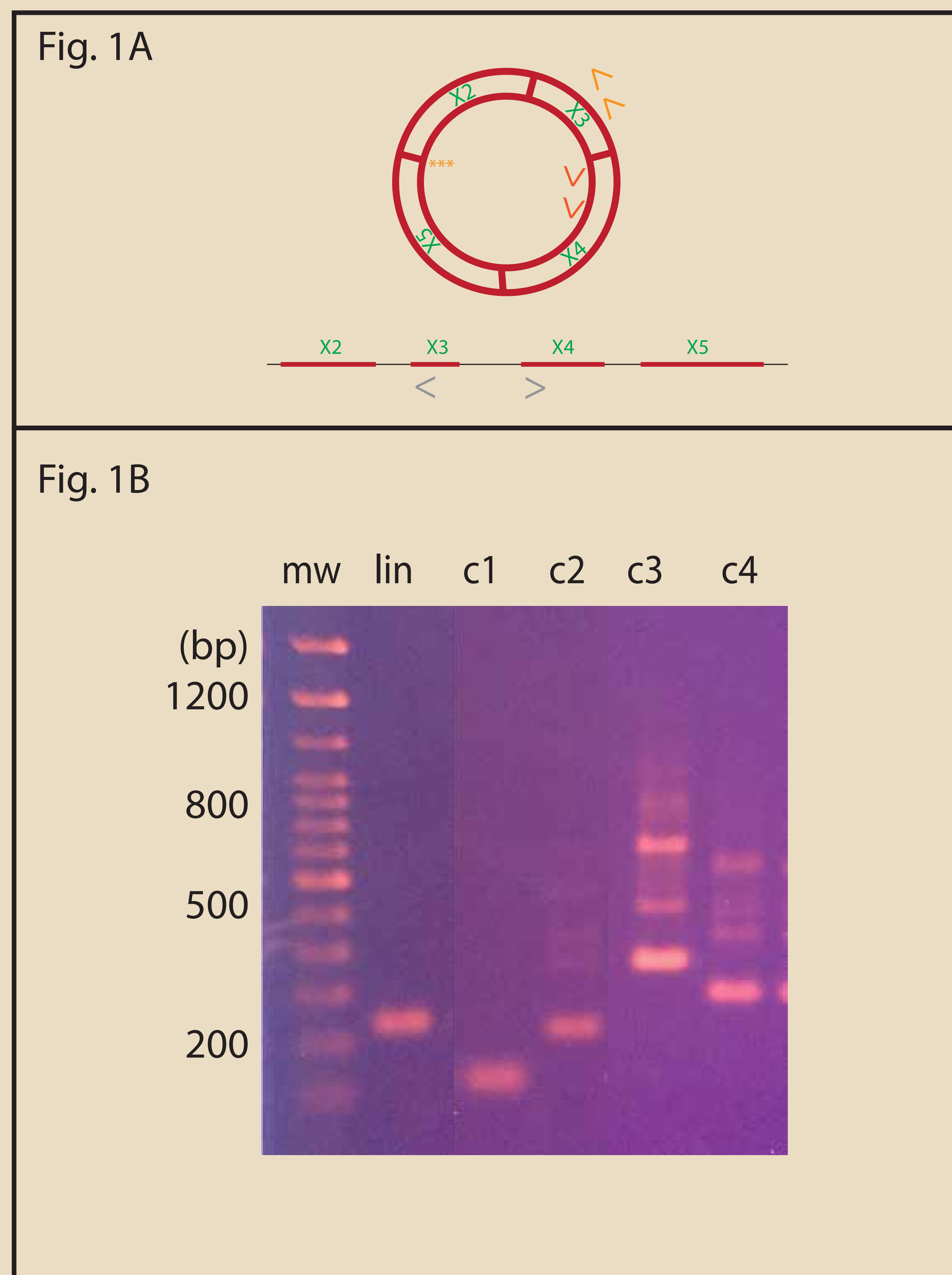
Bancroft, A., Cartwright, B.M. Palau, V.E. and Hurley, D.L.

CONCLUSION

Further investigation will concentrate on the expression of individual circular ZNF292 RNAs after chemotherapy treatment. Does individual species expression vary independently? The role of circRNA in cancer is an emerging area of research and may provide useful oncological drug targets.

Acknowledgments

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