

# Blood STASIS™ 21-ccfDNA stabilizes CTC (Cancer Cells) at room temperature for up to 7 days

## Cancer Cells Stability in Two Whole Blood Collection Systems Blood STASIS 21-ccfDNA tubes vs. STRECK Cell-Free DNA BCT tubes

**Purpose:** To compare the effectiveness of Blood STASIS 21-ccfDNA tubes and Streck's Cell-Free DNA BCT tubes to stabilize Circulating Tumor Cells (CTC) over a time course at room temperature.

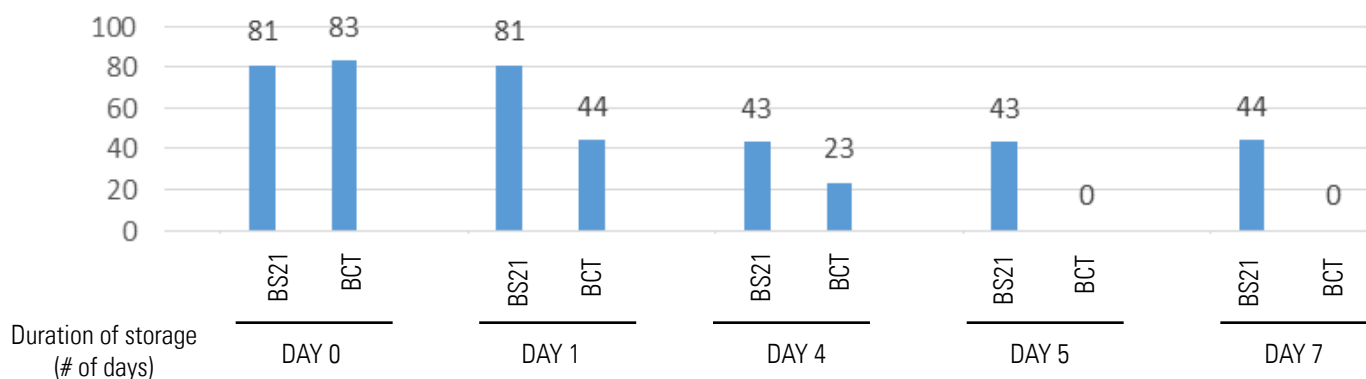
**Methods:** Whole blood from a cervical cancer patient was collected in both Blood STASIS 21-ccfDNA and STRECK's BCT tubes, and stored at room temperature for a time course analysis of circulating tumor cell (CTC) stability.

Plasma and buffy coat were separated and recovered from the red blood cells (RBCs). The recovered plasma and buffy coat were then cleared of CD45+ cells (all leukocyte groups) using a magnetic activated cell sorting approach (MACs). The CD45 cleared sample was then probed with EpCAM magnetic beads (CD326, a protein expressed exclusively in epithelia and epithelial-derived neoplasms) to isolate the CTCs. Recovered CTCs were counted and viability assessed.

### Results Table 1: Pattern of viability of cancer cells stored in Blood STASIS 21-ccfDNA and Streck Cell-Free DNA BCT tubes over time at room temperature

Duration of storage (# of days)	0		1		4		5		7	
	BS21	BCT	BS21	BCT	BS21	BCT	BS21	BCT	BS21	BCT
Blood collection tubes										
Total cells (lived+dead) selected	138,600	92,400	35,200	19,800	30,800	96,400	30,800	88,000	19,800	63,800
Number of live cells	112,266	76,692	28,512	8,712	13,244	22,172	13244	0	8,712	0
Viability of CTC (%)	81	83	81	44	43	23	43	0	44	0

Figure 1: Percentage of viable of CTCs when stored in Blood STASIS 21-ccfDNA and Streck Cell-Free DNA BCT tubes at room temperature over time



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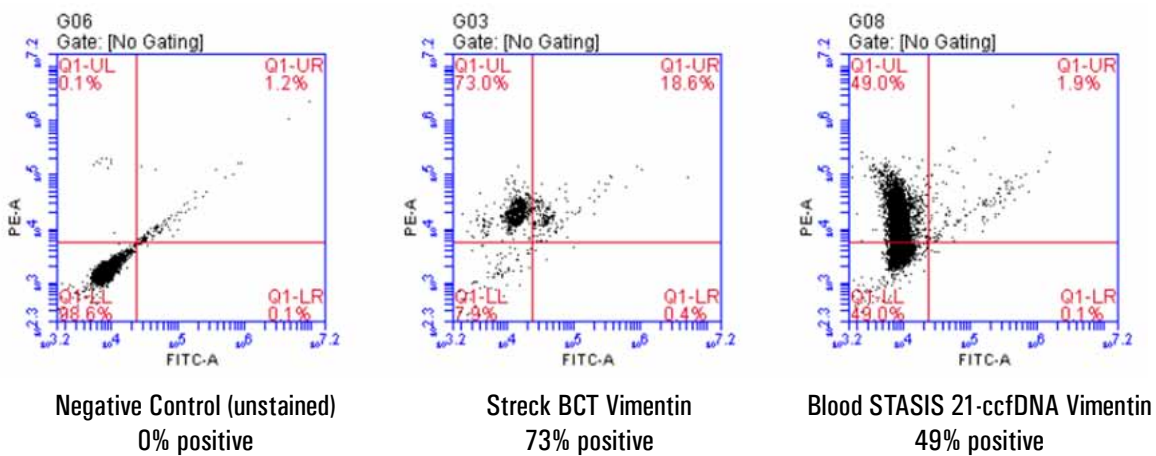
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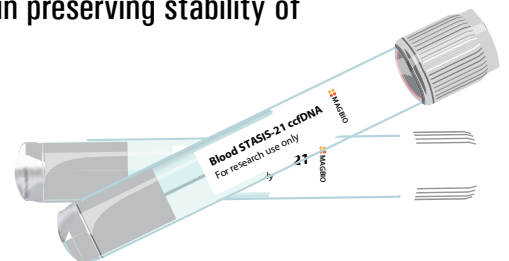
As added support that we were selecting CTC using the EpCAM magnetic beads, we stained the EpCAM+ cells with antibody to vimentin, a protein often used as a marker of mesenchymally-derived cells or cells undergoing an epithelial-to-mesenchymal transition (EMT) during both normal development and metastatic progression. As shown below, EpCAM+ cells selected from both STRECK's BCT and Blood STASIS 21-ccfDNA tubes expressed this marker.



**Concluding Remarks:** It was determined that there was a dramatic reduction in viability for blood collected in STRECK BCT tubes (0 viability by day 5) while viability for blood collected in the Blood STASIS 21-ccfDNA tubes was still at 44% on day 7, the end of the time course. This downward trend in viability was also observed for the CD45+ cells.

Cancer cells in whole blood stored in Blood STASIS 21-ccfDNA tube remain viable at 44% after 7 days at room temperature while cells in whole blood stored in Streck BCT tube retain similar viability after only 24 hours. Viability falls to one day 0% on day 5.

**MagBio's Blood STASIS 21-ccfDNA tube is at least 3 times more effective in preserving stability of epithelial cells (cancer cells) than Streck's Cell-Free DNA BCT tubes.**



### Ordering Information

For research use only.  
Not intended for use in diagnostic procedures.

Cat No.	Product	Description
BS21-CF10-100	Blood STASIS 21-ccfDNA 9 mL (100)	100 Tubes: 2 ml Additive, 7 ml blood draw volume
BS21-CF6-100	Blood STASIS 21-ccfDNA 6 mL (100)	100 Tubes: 1.5 ml Additive, 4.5 ml blood draw volume
BS21-CF3-200	Blood STASIS 21-ccfDNA 3 mL (200)	200 Tubes: .5 ml Additive, 2.5 ml blood draw volume
CFK-D50-5ML	cfKapture 21 Kit	For 50 preps: Purification of cell-free DNA (cfDNA) from 5 ml STABILIZED plasma



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