

Cancer differentiation analysis technology as a novel technology for cerebral cancer screening.

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[Central Nervous System Tumors](#)

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Author(s): Hongmei Tao, Xing Tang, Yue Lin, Chris Chang Yu, Xuedong Du; AnPac Bio-Medical Science and Technology Co., LTD, Shanghai, China; Anpac Bio-Medical Science Co Ltd, Shanghai, China; Anpac Bio-Medical Science Co. Ltd., Shanghai, China

[Abstract Disclosures](#)

Abstract:

Background: While the current cancer screening methods mostly failed to detect cerebral cancer, a novel, promising technology named cancer differentiation analysis (CDA) technology has been developed to measure novel bio-physical properties to obtain valuable multi-level and multi-parameter information including protein, cellular and molecular level information. Initial results showed that CDA technology is capable of detecting cerebral cancer with a high degree of sensitivity and specificity. **Methods:** In this study, samples from 78 cerebral cancer patients and 321 healthy individuals were measured. Peripheral blood of each individual was drawn in EDTA tubes. One class of bio-physical property in blood samples was utilized for CDA tests. CDA data were conducted using SPSS, and the results were shown in table. **Results:** The average CDA values of cerebral cancer and control groups were 52.30 and 33.38 (rel. units) respectively. The results indicated that cerebral cancer could be significantly distinguished from the control ($p < 0.001$). Area under ROC curve (AUC) was 0.980, and sensitivity and specificity was 92.3% and 96.6% respectively. **Conclusions:** Initial results showed that CDA technology could effectively distinguish cerebral cancer from healthy individuals. As a novel bio-physical based cancer detection approach with multi-level and multi-parameter expressions, CDA could be a potential candidate for cerebral cancer screening. Results from Statistical Analysis of CDA.

Group	CDA Data Set	Gender (Male %)	Age Range (year)	Average Age (year)	Median Age (year)	Average CDA (rel. units)	Median CDA (rel. units)	SD of CDA (rel. units)	AUC (rel. units)	Sensitivity	Specificity
Control	321	64	30 - 86	53	53	33.30	33.38	5.81	/	/	/
Cerebral cancer	78	65	30 - 83	55	57	52.30	51.72	8.06	0.980	92.3%	96.6%