

ATP-binding cassette transporter

The ATP-binding cassette [transporters](#) are a transport system superfamily that is one of the largest and possibly one of the oldest [gene](#) families. It is represented in all extant phyla, from prokaryotes to humans. ABC transporters belong to translocases.

The activity of these proteins, severely reduces the amount of therapeutics that penetrates the [tumor cells](#). Roy et al. hypothesized that ABC transporter expression could correlate with [survival](#) surrogates. They assessed the [expression](#) of four commonly expressed ABC transporters in [GBM](#) samples and investigated if [mRNA](#) levels could serve as a [prognostic biomarker](#).

Methods: Human specimens were analyzed by qPCR to assess [ABCB1](#), [ABCC1/3](#) and [ABCG2](#) expression. Kaplan-Meier and multivariate analyses were then used to evaluate the correlation with [overall survival](#) (OS) and [progression-free survival](#) (PFS).

The cohort included 22 non-tumoral samples as well as 159 GBM tumor specimens. ABC transporters were significantly more expressed in GBM samples compared to non-tumoral tissue. Moreover, [ABCC1](#) and [3](#) mRNA expression were significantly increased at recurrence. Statistical analyses revealed that increased expression of either [ABCC1](#) or [ABCC3](#) did not confer a poorer prognosis. However, increased [ABCC1](#) mRNA levels did correlate with a significantly shorter PFS.

The expression of the four ABC transporters evaluated would not be suitable [prognostic biomarkers](#). They believe that when estimating [prognosis](#), the plethora of mechanisms implicated in [chemoresistance](#) should be analyzed as a multi-faceted entity rather than isolated units ¹⁾.

¹⁾

Roy LO, Lemelin M, Blanchette M, Poirier MB, Aldakhil S, Fortin D. Expression of [ABCB1](#), [ABCC1](#) and [3](#) and [ABCG2](#) in glioblastoma and their relevance in relation to clinical survival surrogates. J Neurooncol. 2022 Nov 7. doi: 10.1007/s11060-022-04179-1. Epub ahead of print. PMID: 36342588.

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