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Expression of Parkin isoforms in human lymphomonocyte

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Parkin (PARK2) is one of the largest gene in the human genome. Its mutations cause a form of autosomal recessive juvenile-onset of Parkinson disease (ARJPD) (1). To date, a repertoire of 21 parkin alternative splice variants has been identified. In the past, the role of the full-length parkin protein was extensively investigated and assessed also in human blood samples (2, 3). In contrast, less attention has been put on the other isoforms.

In the present study, we investigated for the first time, the expression profile of parkin isoforms in three lymphomonocyte (LMN) subpopulations: T lymphocyte (CD2+), monocyte (CD14+) and B lymphocyte (CD19+).

The expression of H1/H5 and H6 isoforms has been observed in total LMN homogenate, whereas H20 and H1/H5 variants were detected in all three LMN subpopulations by western blot analysis. The cellular distribution of parkin isoforms has been evaluated by immunofluorescence analysis. Although parkin is predominantly expressed in the cytoplasm, immunoreactivity has also been detected at nuclear and perinuclear level.

Our data suggest that, the discovery of a specific expression profile of these isoforms into LMN of ARJP patients might allow developing new diagnostic tools for this neurodegenerative disease.

References

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Keywords

Parkin isoforms; human lymphomonocytes; T lymphocyte (CD2+); monocyte (CD14+); B lymphocyte (CD19+).

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