

Abstract:

Sporadic Burkitt lymphoma (sBL) can be delineated from diffuse large B-cell lymphoma (DLBCL) by a very homogeneous mRNA expression signature. However, it remained unclear whether all three BL variants—sBL, endemic BL (eBL) and human immunodeficiency virus-associated BL (HIV-BL)—represent a uniform biological entity despite their differences in geographical occurrence, association with immunodeficiency and/or incidence of Epstein–Barr virus (EBV) infection. To address this issue, we generated micro RNA (miRNA) profiles from 18 eBL, 31 sBL and 15 HIV-BL cases. In addition, we analyzed the miRNA expression of 86 DLBCL to determine whether miRNA profiles recapitulate the molecular differences between BL and DLBCL evidenced by mRNA profiling. A signature of 38 miRNAs containing MYC regulated and nuclear factor- κ B pathway-associated miRNAs was obtained that differentiated BL from DLBCL. The miRNA profiles of sBL and eBL displayed only six differentially expressed miRNAs, whereas HIV and EBV infection had no impact on the miRNA profile of BL. In conclusion, miRNA profiling confirms that BL and DLBCL represent distinct lymphoma categories and demonstrates that the three BL variants are representatives of the same biological entity with only marginal miRNA expression differences between eBL and sBL.