Signal transduction pathways in chronic lymphocytic leukemia

1. Both B-cell intrinsic factors, such as BCR signaling and enhanced BTK activity, as well as extrinsic factors, such as T cell help, play critical roles in survival, proliferation and shaping the B cell repertoire of CLL. (this thesis)

2. Unmutated CLL can be classified into two distinct subsets: one is T cell-independent, while the other arises upon antigen stimulation in the context of T-cell help. (this thesis)

3. In addition to kinases downstream of the BCR, phosphatases such as SHIP1 and SHIP2 can have an oncogenic role in CLL.(this thesis)

4. Independent activation of the ERK and PI3K/BTK signaling pathways indicates redundancy in survival signaling in CLL and should be considered when choosing kinase inhibitors in CLL therapy. (this thesis)

5. ERK activation is not only a marker of anergy in CLL, but may also act as an inducer of apoptosis. (this thesis)

6. Moving from the era of chemotherapy toward an era of patient-friendly novel agents represents a dramatic improvement in the life of our CLL patients, and brings us a step closer to cure of this disease. (Woyach J.A. et. al., Blood 2015)

7. Tumor evolution following therapy is the rule rather than the exception. (Landau D.A. et al., Nature Communications 2017)

8. Progress in medicine must always remain in our rear view mirror, leaving behind what has been accomplished and forever searching for the next advances of the future. (Yazdy M.S. et. al., Blood 2018)

9. Education is for improving the lives of others and for leaving your community and world better than you found it. (Marian Wright Edelman)

10. Natural development is achieved step by step. It is guided by the pace of evolution itself.(Dharam Singh Nihang)

11. Life is not merely being alive, but being well. (Marcus Valerius Martialis)