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| I. Project Title |
| GWAS-based meta-analysis on genetic variants of F-box protein family | **Date: April 21, 2023** |
| **II. Project Leaders (List Names and Institutes)**  | **Primary Contact****Information** |
| Qingyi Wei, Hongliang Liu, David Christiani, Jennifer Anne Doherty, Chris Amos,  | **Name: Qingyi Wei****Email:** **Qingyi.wei@duke.edu****Tel: 919-660-0562** |
| III. Progress to date. *What has been done so far to move the project forward (data pooling, grant submission, etc), and when it was done* |
| We have collected the summary data of genetic variants in F-box protein family from TRICL and got some preliminary results about their associations with lung cancer risk and gene expression. |
| **IV. Project Status and Preliminary Results**. *S****ummarize the current status of the project. Report preliminary results if there is any***  |
| We have analyzed the association of 11,203 SNPs in 71 genes of F-box family with lung cancer risk using the TRICL summary data and found multiple SNPs in *FBOX genes* passed multiple comparisons correction with FDR <0.2. Further functional annotation revealed that SNPs (e.g. rs7763565 and rs4869776) were correlated with the mRNA expression of corresponding genes or changed the encoded amino acids. We are performing investigation of the potential functions of these identified SNPs using other data source (e.g, GTEx and TCGA) and their associations with lung cancer risk in the OncoArray data of lung cancer. |
| **V. Justification of Extension** |
| In this project, we have found some potential functional variants by using the TRICL summary data and the mRNA expression data from 1000 Genome project. We will investigate the associations of these variants in the OncoArray data and their racial disparisity. We would like to get a extension to complete this project. |
| **VI. Future Plans & Timeline** |
| 1. Summarize the TRICL and Oncoarray results of autophagy genes: 4 months
2. In-silico functional annotation: 2 months
3. Draft manuscript and circulate to participation ILCCO-INTEGRAL groups:  4 months
4. Submission for publication.
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