Building an ESCC database to link clinical properties with molecular mechanistic determinants

**Purpose**

* To facilitate the biomedical analysis of esophagus squamous cell carcinoma (ESCC)
* To offer a platform for clinicians to look up knowledgebase, assist diagnosis, and offer drug choice
* To link the molecular biological research with clinical properties and unveil the mechanistic determinant for ESCC
* To help for drug target development
* To educate patient, share knowledge and ultimately develop personalized therapeutic strategy

**Identify a few areas of unmet need**

* Driver mutation vs. passenger mutation
* Existing pathway analysis databases with incorrect information (i.e. sox2 --> p60 vs. sox2 --> Oct4 in embryonic stem cells)
* Mutation bank, i.e. dbSNP etc.
* Interaction with drug targets
* Clinical endpoints collection
* Collection of current clinical trials associated with ESCC, possible intervention links to “cancer medicine”, which shall be linked somehow to “chemical compound database” (if any)
* Chemical and drug property databases

**Major milestones in implementation**

Throughout this research process, we plan to implement following parts

1. A web portal for data collection
2. A series of databases
   1. A mutation database
   2. Pathway and mechanistic database
   3. A clinical informatics database
   4. A chemical and drug database
   5. A drug target database
   6. A patient social database
   7. …
3. A front end web-development
4. A database/web-portal paper for NAR in Jan. 2017

**Development staging**

1. Determining the information collection standard/protocol
2. Developing database schema
3. Developing web-portal for data collection
4. Populating the database
5. Developing the web-front end for the database
6. Drafting the NAR paper

**Funding and support**

* Incorporate Euclados Bioinformatics Solutions, LLC
* One FTE support needed
* Getting funded via different routes
* Helpers needed/hired