|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Atributos** |  |  |  |  |  |
| **Entidade/relacionamento** | **Nome** | **Tipo e dominio** | **Multivalor** | **Nulos** | **Chave primária** |
| **Genbank** | ID.keys | String(50) | - | N | S |
|  | Organism | String(200) | - | N | N |
|  | Acession | String(50) | - | N | N |
|  | Definition | String(200) | - | S | N |
|  | KeyWords | String(200) | - | S | N |
|  | Comments | Varchar | - | S | N |
| **Locus** | ID.fk | String(50) | - | N | S |
|  | Size | Int | - | N | N |
|  | Molecular type | String(50) | - | N | N |
|  | Genbank division | String(3) | - | N | N |
|  | Modification date | Date(dd/mm/yyyy) | - | N | N |
| **Sequences** | ID.fk | String(50) | - | N | S |
|  | Sequence | Varchar | - | N | N |
|  | Length | Int | - | S | N |
|  | Count A | Int | - | S | N |
|  | Count C | Int | - | S | N |
|  | Count T | Int | - | S | N |
|  | Count G | Int | - | S | N |
| **Features** | ID.fk | String(50) | - | N | S |
|  | CDS\_fk | String(50) | - | N | N |
|  | Gene | Int (quantas genes) | - | S | N |
|  | Regulatory | Int (quantas zonas regulatórias) | - | S | N |
|  | Exons | Int | - | S | N |
|  | Poly A-site | Int | - | S | N |
|  | Misc – feature | Int | - | S | N |
|  | mRNA | Int | - | S | N |
| **CDS** | ID CDS.key | String(50) | - | N | S |
|  | Translacion seq. | String | - | N | N |
|  | Localization/span | String(20) | - | N | N |
|  | ID protein | String(50) | - | N | N |
|  | Protein | String(50) | - | N | N |
| **Source** | ID.fk | String(50) | - | N | S |
|  | Location span | String(50) | - | N | N |
| **Authors** | ID Authors.fk | String(100) | - | N | S |
|  | Name | String(200) | - | N | N |
| **References** | ID.fk | String(50) | - | N | S |
|  | Authors.key | String(100) | - | N | N |
|  | Pubmed.fk | String(50) | - | S | N |
|  | Title | String(200) | - | S | N |
|  | Journal | String(200) | - | S | N |
|  | Consortium | String(200) | - | S | N |
|  | Remark | String(200) | - | S | N |
| **Pubmed info** | ID Pubmed.key | String(50) | - | N | S |
|  | Title | String(200) | - | N | N |
|  | Authors | String(200) | - | N | N |
|  | Affiliation | String(200) | - | N | N |
|  | Abstract | Varchar | - | N | N |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Entidade** | **#** | **Relacionamento** | **Entidade** | **#** | **Chaves a usar** |
| Genbank | 1…1 | Contém | Locus | 1…1 | ID.keys -> ID.fk |
| Genbank | 1…1 | Contém | Sequences | 1…1 | ID.keys -> ID.fk |
| Genbank | 1…N | Contém | References | 1…1 | ID.keys -> ID.fk |
| References | N…N | Contém | Authors | N…N | Authors.key -> ID Authors.fk |
| Pubmed info | 1…1 | Contém | References | 1…1 | ID Pubmed.key -> pubmed.fk |
| Genbank | 1…N | Contém | Features | 1…1 | ID.keys -> ID.fk |
| Features | 1…1 | Contém | Source | 1…1 | ID.fk (fea) -> ID.fk (sour) |
| Features | 1…N | Contém | CDS | 1…1 | CDS\_fk -> ID CDS\_key |

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| Entidade |  |
| Nome | Descrição |
| Genbank |  |
| Locus |  |
| Sequence |  |
| References |  |
| Authors |  |
| Features |  |
| CDS |  |
| Source |  |