**SUPPLEMENTARY MATERIALS**

**Table S1: Composition of different herbal tea formulations**

|  |  |  |  |
| --- | --- | --- | --- |
| **Constituents** | **Formulation 1** | **Formulation 2** | **Formulation 3** |
| *Cymbopogon citratus* leaves | 70% | 60% | 50% |
| *Foeniculum vulgare* seeds | 20% | 30% | 40% |
| *Murraya koenigii* leaves | 10% | 20% | 30% |

**TableS 2: Qualitative phytochemical analysis of aqueous extracts of samples**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Phytochemical Tests** | **Herbal tea** | ***Cymbopogon citratus* leaves** | ***Foeniculum vulgare* seeds** | ***Murraya koenigii* leaves** |
| Phylobatannins | - | - | - | - |
| Tannins | + | + | + | + |
| Anthraquinones | - | - | - | - |
| Carotenoids | - | - | - | - |
| Terpenoids | + | - | - | + |
| Flavonoids | + | + | + | + |
| Saponins (Foam Test) | + | + | + | + |
| Steroids | - | - | - | - |
| Proteins (Ninhydrin test) | - | - | + | + |
| Carbohydrates | + | - | - | + |
| Quinones | + | + | + | + |
| Coumarins | + | + | + | + |
| Alkaloids (Hager’s test) | + | + | + | + |
| Glycosides (Keller Kilianin test) | + | + | + | + |
| Phytosterol | - | - | - | - |
| Phenolic compound | + | + | + | + |

**Table S3: Binding of the ligands (rutin, citronellal and vanillic acid) to FTO protein**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | | | **Amino acids** | **Ligand-AA binding sites** | | **Bonding** | | **Length (Å)** |
| **Interaction of rutin with FTO protein** | | | Glu 368  Lys 365  Arg 380  Asn 372  His 371  Trp 407  Glu 375  Phe 376 | O9-OE1  O10-O  O11-NH1  O2-ND2 | | Hydrogen bonding  Hydrogen bonding  Hydrogen bonding  Hydrogen bonding  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact | | 2.97  2.87  2.83  3.08 |
| **Interaction of citronellal with FTO protein** | Tyr 389  Gln 381  Trp 396  Arg 322  Trp 378  Val 323  Ala 324  Glu 377 | | O1-OH | Hydrogen bonding  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact | | 3.13 | | |
| **Interaction of vanillic acid with FTO protein** | Val 413  Thr 414  Gly 367  Glu 368  Leu 356 | |  | Hydrophobic contact  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact  Hydrophobic contact | |  | | |