Avycaz (ceftazidime-avibactam) is a combination of a cephalosporin and a beta-lactamase inhibitor. In combination with metronidazole, it is used for the treatment of complicated intra-abdominal infections (cIAI) caused by the following susceptible microorganisms: Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, Providencia stuartii, Enterobacter cloacae, Klebsiella oxytoca, and Pseudomonas aeruginosa in patients 18 years or older. It is also indicated for the treatment of complicated urinary tract infections (cUTI) including pyelonephritis caused by the following susceptible microorganisms: Escherichia coli, Klebsiella pneumoniae, Citrobacter koseri, Enterobacter aerogenes, Enterobacter cloacae, Citrobacter freundii, Proteus spp., and Pseudomonas aeruginosa in patients 18 years or older. It is supplied as a solution for intravenous infusion. The recommended dosage is 2.5 grams (2 grams ceftazidime and 0.5 grams avibactam) administered every 8 hours by intravenous (IV) infusion over 2 hours. For treatment of cIAI, metronidazole should be given concurrently (Ref: Vidhya. FDA approved drugs – February 2015. Drug Discovery, 2015, 10(24), 42-44); (Image: http://img.medscape.com/).
Zerbaxa is a combination of ceftolozane and tazobactam. Ceftolozane belongs to the cephalosporin class of antibacterial drugs. The bactericidal action of ceftolozane results from inhibition of cell wall biosynthesis, and is mediated through binding to penicillin-binding proteins (PBPs). Ceftolozane is an inhibitor of PBPs of P. aeruginosa (e.g. PBP1b, PBP1c, and PBP3) and E. coli (e.g., PBP3). Tazobactam sodium has little clinically relevant in vitro activity against bacteria due to its reduced affinity to penicillin-binding proteins. It is an irreversible inhibitor of some beta-lactamases (e.g., certain penicillinases and cephalosporinases), and can bind covalently to some chromosomal and plasmid-mediated bacterial beta-lactamases.

*Drug Discovery*, 2015, 10(24), 32-37

Rytary is an extended release formulation of carbidopa and levodopa. Carbidopa: When levodopa is administered orally, it is rapidly decarboxylated to dopamine in extracerebral tissues so that only a small portion of a given dose is transported unchanged to the central nervous system. Carbidopa inhibits the decarboxylation of peripheral levodopa, making more levodopa available for delivery to the brain. Levodopa: Levodopa is the metabolic precursor of dopamine, does cross the blood-brain barrier, and presumably is converted to dopamine in the brain. This is thought to be the mechanism whereby levodopa relieves symptoms of Parkinson’s disease.

*Drug Discovery*, 2015, 10(24), 38-41
Avycaz (ceftazidime-avibactam) is a combination of a cephalosporin and a beta-lactamase inhibitor. In combination with metronidazole, it is used for the treatment of complicated intra-abdominal infections (cIAI) caused by the following susceptible microorganisms: Escherichia coli, Klebsiella pneumoniae, Proteus mirabilis, Providencia stuartii, Enterobacter cloacae, Klebsiella oxytoca, and Pseudomonas aeruginosa in patients 18 years or older. It is also indicated for the treatment of complicated urinary tract infections (cUTI) including pyelonephritis caused by the following susceptible microorganisms: Escherichia coli, Klebsiella pneumoniae, Citrobacter koseri, Enterobacter aerogenes, Enterobacter cloacae, Citrobacter freundii, Proteus spp., and Pseudomonas aeruginosa in patients 18 years or older. It is supplied as a solution for intravenous infusion. The recommended dosage is 2.5 grams (2 grams ceftazidime and 0.5 grams avibactam) administered every 8 hours by intravenous (IV) infusion over 2 hours. For treatment of cIAI, metronidazole should be given concurrently.

*Drug Discovery, 2015, 10(24), 42-44*

**HERBAL DRUG**

*Study of Junctopholin 2 (JPH2) protein and its binding efficiency with herbal and allopathic antibiotics*

Sathish P, Ruba Glory P, Palanivelu K
This study is aimed to determine the effect of drug (herbal and allopathic) on the JPH2. JPH2 protein sequence was collected from UniProt. The composition of amino acids was determined by using ProtParam. The tertiary structure of JPH2 was predicted by using CPH modeling server and visualized through Rasmol. Ramachandran plot was performed for JPH2 using Ramage software. The active sites were predicted by CASTp. The docking of Junctophilin-2 protein with selected one herbal antibiotic (TOCOPHEROL) and one allopathic antibiotic (BISOPROLOL) was performed by the use of the tool Hex 6.3.

*Drug Discovery*, 2015, 10(24), 45-55

### Chemical characterization of Gomutra (GIR) by high resolution high performance liquid chromatography

Bismi Nivethitha R, Padma Priya SS

Cow urine has lot of application in medicine. Cow urine provides immunity power by increasing resistance power against diseases in human body. It is anti toxin. It has been found that cow urine has potential to control amongst cow urine is best their entire exercise of marketing the cow products and promising huge economic benefits. Collected the (Gir) cow urine Gir Fresh, Distillate and Go-Kshar these all are under study of HPLC (High Performance Liquid Chromatography) HPLC performed on LC-8A shimadzu HPLC with mobile phase water acetonitrile (80:20) flow rate 1.0/min uv detection at 275 nm and C-18 E MERCK (150X4nm) rentation time 20 min at the end of the result the chemical compound are identified.

*Drug Discovery*, 2015, 10(24), 56-66

### Immunomodulatory Efficiency of Cow Urine Distillate (CUD) on the Haematology of Oreochromis mossambicus (Peters)

Mala G, Venkatalakshmi S

Cow, *Bos indicus* is mentioned as the most valuable animal in all Veda and it is called as the mother of all. The composition Cow’s excretions, Urine, dung, milk, curd and ghee, the five ingredients together known as Panchagavga is the main ingredient of many of our ayurvedic preparations. From the ancient period cow’s urine has been used as a medicine for thousands of years Cow Urine therapy and all traditional practices from Indian systems of medicine have a strong scientific base. Traditional system in medicines, whether from Ayurveda or Siddha or the use of Cow Urine distillate as immunomodulator are based on classical texts and system, practices and product handed down over generations going back to Charaka Sushrutha, Vagabhatta, the Ashtangahridaya, and the Samhitas. In Ayurveda Cow Urine is suggested for improving general health. Cow’s Urine also consist of 24 types of salts (Lavana in Sanskrit) They are Sodium, Potassium, Magnesium, list all .It is futile in cases of advanced stages where even modern medicine is lacking in solution.Its application in Aquaculture has not been explored so far.Hence the present study has been aimed to assess the effect of Gir Cow Urine on the haematological Parameters of Oreochromis mossambicus(peters). The study revealed that the values of, Peripheral leukocyte count and, Haemoglobin level were significantly increased by 0.1% of Gir Cow Urine Distillate.

*Drug Discovery*, 2015, 10(24), 67-75

### Optimization of Concentration of *Bos indicus* Cow Urine Distillate (CUD) in Oreochromis mossambicus (Peters) for Immunostimulatory activity

Durga B, Mala G, Venkatalakshmi S

Cows were regarded as wealth and were the backbone of the economy of ancient Indians. The sacred Indian cow, *Bos indicus*, is believed to be a “mobile hospital” for the treatment of many diseases. Wars were fought for acquiring cows. Cattle were one of the most frequently used animals described in Vedas. Cows were regarded as mother (“Gau-mata”) and referred to as Aghnya. Atharvaveda provides interesting information about ailments of animals, herbal medicines, and cure of diseases. Urine was also considered as an antidote to poisons (Sushrut Samhita). From the ancient period, cow’s urine has been used as a medicine. In Veda, cow’s urine was compared to the nectar. The present study is aimed at investigating the immunostimulatory effect of cow urine distillate of *Bos indicus* (Gir breed) in *Oreochromis mossambicus* (Peters). Since cow urine is employed for
curing many human ailments and also its immunomodulatory potential was well reported in literature it was thought worthy to find its optimal concentration for its application in aquaculture. Aquaculture is an ecofriendly, socially sound and economically viable innovative technology to manage water resources on low capital input basis. However there is a continuous threatening for the industry due to fish pathogens. The results revealed that 0.001% of cow urine distillate (CUD) is the optimal concentration for its effect on neutrophil activity.

_Drug Discovery,_ 2015, 10(24), 76-83

**MEDICINAL PLANT**

**Study on the relative efficacy of indigenous plant extracts as larvicide against the mosquito Culex quiquefasciatus (Say.)**

Logambal SM, Venkatalakshmi S

There has been considerable concern for the past few decades about the excessive use of chemical pesticides both in agriculture and for control of vector borne diseases. It has become increasingly difficult to control mosquitoes that serve as vector for various diseases. The present project was undertaken to assess the efficacy of certain plant extracts as larvicides E dipa show your corvette against _Culex quinquefaciatus_. The leaves of _cassia auriculata, eucalyptus sp., Melia azedarach, Vitex negundo and pongamia glabra_ were chosen for the study. The leaf extracts were tested against mosquitoes. The results revealed that the effect was greater in the pure extracts of the leaves than in the water extracts. _Pongamia glabra_ shows the least LC50 value among tested plants. The crude acetone extract of _Pongamia glabra_ was highly effective against the selected species.

_Drug Discovery,_ 2015, 10(24), 84-92