

# IMPACT

## Colostrum Supplement for newborn animals & marsupial joeys

### About Colostrum

Colostrum is the first milk produced after birth. It is high in protein much of which is immunoglobulin. Immunoglobulins are a group of proteins with antibody activity that are produced in response to infection by micro-organisms. The three main classes of immunoglobulins are Immunoglobulin A (IgA), Immunoglobulin G (IgG) and Immunoglobulin M (IgM). A few mammals such as rabbits, mice and humans are born with maternal transplacental IgG but not IgA or IgM. However most species are born devoid of immunity and must acquire their initial immunoglobulins from colostrum. For the immunoglobulins in colostrum to function as systemic antibodies they must first be absorbed from the intestine unaltered <sup>1,2,9</sup>. Colostrum contains other proteins such as, lactoferrin, lactoperoxidase and lysozyme that have antibacterial activity. These proteins act to inhibit the colonisation of the intestine by pathogenic micro-organisms <sup>4,10</sup> and together with low levels of immunoglobulins may remain in the milk throughout lactation. These proteins are usually found in higher concentrations in colostrum and early lactation milk <sup>3,8</sup>.

Lactoferrin binds iron and facilitates its uptake from the intestine. Due to its iron binding capacity lactoferrin inhibits a wide range of micro-organisms that require iron for growth <sup>5,7</sup>. When lactoferrin is hydrolysed by gastric enzymes it releases a peptide that is highly bactericidal to several species of pathogenic organisms <sup>12</sup>.

Lactoperoxidase is bacteriostatic to a wide range of bacteria in the presence of thiocyanate and hydrogen peroxide generating enzymes <sup>4,5,11</sup>. Lactoperoxidase denatures bacterial proteins by halogenation with hydrogen peroxide and halogens.

Lysozyme is bactericidal to many bacteria. Lysozyme hydrolyses the muramic acid in the cell wall thus causing the bacterial cell to lyse. Lysozyme also acts in concert with IgA, lactoperoxidase and ascorbate to lyse bacteria.

In eutherians, colostrum is only produced for a short time after birth. During this time ingested antibodies are protected from intestinal digestive enzymes by antiproteases present in the colostrum. Intestinal closure to the absorption of antibodies occurs as the composition of mammary secretion changes from colostrum to normal milk, when the levels of antibody fall rapidly <sup>2,9</sup>.

In marsupials, there is probably no colostrum as such. Intestinal closure occurs later in pouch life so antibodies are present in the milk throughout much of lactation <sup>6,13</sup>.

### References

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### About Impact Colostrum Supplement

**Impact** is a food supplement made from bovine colostrum powder and contains whey protein, omega-3 and omega-6 fatty acids, vitamins and minerals. Feed **Impact** to newborn animals or marsupial joeys as a replacement for or as an adjunct to milk replacers.

Available in 25g, 50g, 250g, and 500g polylined resealable jars.

Wombaroo Food Products ■ email:wombaroo@adelaide.on.net ■ Phone 08 8391 1713

## Feeding Chart for Impact

Body Weight g	Impact Heaped spoons	Warm Water ml	Daily Impact Dose ml	Body Weight kg	Impact Powder g	Warm Water ml	Daily Impact Dose ml
up to 50	1/2	2	2	1 to 2	15	48	60
50 to 100	1	3	4	2 to 3	20	64	80
100 to 200	2	8	10	3 to 4	25	80	100
200 to 300	3	13	16	4 to 5	30	96	120
300 to 400	4	16	20	5 to 10	60	190	240
400 to 500	5	20	24	10 to 20	100	320	400
700 to 800	6	24	30	20 to 30	130	420	520
800 to 900	7	30	36	30 to 40	160	510	640
900 to 1000	8	32	40	40 to 50	200	640	800

**1 heaped spoon = 1.25g**

### Directions for Eutherians

This applies to all domestic animals including cats, dogs, rabbits, rats, guinea pigs, horses, alpacas, cows, sheep, pigs & deer. Also used for eutherian wildlife and zoo mammals.

**Impact** should be fed as soon as possible after birth, and preferably before milk is fed. **Impact** can be absorbed for up to 48 hours after birth, depending on the species. Weigh the animal and select the appropriate weight range from the chart. Mix the amounts of **Impact** powder and warm pre-boiled water to make the daily **Impact** requirement. Refrigerate prepared **Impact** for one day only or store frozen in ice cube trays for up to 1 month.

**Do not mix or feed Impact with milk.**

**Newborns that have not received maternal colostrum or milk.**

**First 12 hours:** Do not feed milk during this time. Prepare a daily dose of **Impact** as described above and feed 1/4 of the amount every 2 hours.

**Next 36 hours:** Commence feeding milk every 4 hours. Prepare a daily dose of **Impact** as described above and feed 1/4 of the amount every 4 hours. Feed **Impact** 2 hours after the first milk feed so that the remaining **Impact** feeds are mid way between the next milk feeds.

**Newborns that have received some milk but no maternal colostrum.**

**First 12 hours:** Stop feeding milk. Prepare a daily dose of **Impact** as described above and feed 1/4 of the amount every 2 hours.

**Next 36 hours:** Recommence feeding milk. Prepare a daily dose of **Impact** as described above and feed 1/4 of the amount mid way between milk feeds.

### Directions for Marsupials

Marsupials are different in that they do not produce a colostrum milk. **Impact** is added to marsupial milk because intestinal closure occurs later in marsupials and immunoglobulins are present in milk for much of lactation.

**Mix and feed Impact with milk.**

**For very early lactation to mid lactation (Wombaroo <0.4 to 0.6):** Select the appropriate amount of **Impact** powder for body weight from the chart. Mix the powder into the required daily volume of milk and feed as usual. This procedure may be repeated for up to 5 days.

**For late lactation (Wombaroo >0.7):** Select the appropriate amount of **Impact** for body weight from the chart and add this to the normal daily feed volume of milk. Repeat if required.