

Dose Banding

1. What is dose banding?

Dose banding specifies a predetermined standard dose that will be dispensed when an individual calculated dose is within a specific range or band. All calculated doses within a certain band are substituted with the standardized dose indicated for that dose range.

Capecitabine is an example of a medication that is dispensed using dose banding owing to limitations imposed by tablet sizes. The dose calculated for an individual, based on Body Surface Area (BSA), is rounded to a standardized dose to accommodate the tablet strengths available. For example:

- capecitabine dose = $BSA 1.81 \text{ m}^2 \times 1000 \text{ mg/m}^2 = 1810 \text{ mg PO BID x 14 days}$
- capecitabine is only available as 150 mg and 500 mg tablets
- dose is rounded down to 1800 mg PO BID x 14 days

Standardized doses used in dose banding infusors for intravenous administration help reduce dose calculation errors and clarify dose reduction levels. They also enable purchasing of premixed products to reduce patient wait times and decrease staff workload. These standardized doses can be used more readily than individualized doses for different patients in case of cancellations.

2. Which BC Cancer protocols use dose-banded infusors?

In October 2014, BC Cancer implemented dose banding of fluorouracil for Gastrointestinal (GI) protocols that include a **46-hour** infusional fluorouracil treatment to enhance patient safety and process efficiency. Baxter Infusor™ LV5 (Large Volume 5 mL/hour) infusors are used to prepare all doses for these protocols. Affected protocols indicate that continuous infusional doses of fluorouracil between 3000 to 5500 mg may alternatively be administered using a standardized dose band infusor, per the dose banding ranges outlined

in the table below. Note that the standardized dose may not fall within 5% of the ordered dose (as normally required per [Policy III-10 Systemic Therapy Treatment Delivery Process](#)) but is allowed by the protocol.

Dose Banding Range	Dose Band Infusor™
Less than 3000 mg	Pharmacy to mix specific dose
3000 to 3400 mg	3200 mg
3401 to 3800 mg	3600 mg
3801 to 4200 mg	4000 mg
4201 to 4600 mg	4400 mg
4601 to 5000 mg	4800 mg
5001 to 5500 mg	5250 mg
Greater than 5500 mg	Pharmacy to mix specific dose

Fluorouracil doses between 3000 to 5500 mg

- dose bands are in 400 mg increments so that dose adjustments are within 200 mg of the calculated dose
- pharmacy to dispense dose banded dose

Fluorouracil doses outside 3000 to 5500 mg

- not dose banded
- pharmacy to mix exact dose

For all other protocols with an infusional fluorouracil treatment component that do not include a dose banding alternative, the infusor will continue to be prepared with the exact calculated dose.

3. Why is the LV5 Infusor used in BC Cancer dose banded protocols?

In May 2018, the Baxter LV5 Infusor™ was selected as the standard device for delivery of all dose-banded gastrointestinal 46-hour fluorouracil treatments. The option to use Baxter SV2

Infusors™ was removed from these protocols. The decision to standardize to LV5 Infusors was made to:

- minimize infusor selection errors
- provide consistency for patients who may alternate treatments between BC Cancer and regional hospitals
- standardize order entry for Clinical and Systems Transformation (CST)

Note: LV5 Infusors list 240 mL as the nominal volume for infusion at 5 mL/hour over 48 hours, and they can be filled to a volume of 230 mL to infuse over 46 hours (see Infusor Selection FAQ). Other protocols may use different rate infusors. In all cases, care should be taken to select the correct rate infusor to allow the fluorouracil dose to be infused over the time interval specified by the protocol.

When selecting the appropriate infusor to dispense a 46-hour infusional fluorouracil treatment, follow the guidelines for the individual facility where you are practicing:

In BC Cancer Centres use the dose banding alternative:

- **Dose banding**
 - LV5 Infusors filled to a final volume of 230 mL for all doses
 - Select LV5 Infusor
 - For doses between 3000 to 5500 mg, use dose banded dose
 - For doses outside 3000 to 5500 mg, prepare exact dose

In [Community Oncology Network \(CON\)](#) facilities, use the dose banding alternative or the non-dose banding alternative as outlined by the individual institution:

- **Dose banding alternative**
 - Same as above
- **Non-dose banding alternative**
 - LV5 Infusors are filled to a final volume of 230 mL for **all** doses (recommended)
 - Select LV5 Infusor, prepare exact dose

- OR select either
 - LV5 Infusors filled to a final volume of 230 mL for exact doses greater than 4400mg
 - SV2 Infusors filled to a final volume of 92 mL (to infuse at 2 mL/hour over 46 hours) for exact doses less than or equal to 4400mg
- NOTE:** the option to use SV2 Infusors no longer exists in BC Cancer protocols or pre-printed orders.

In all cases ensure the infusor selected will result in the dose being infused over 46 hours.

Please refer to the following BC Cancer ***III-140 Dose Banded Chemotherapy Treatments Policy*** and ***Procedure*** on [SHOP](#).

Revised: March 30, 2023

References:

1. BC Cancer Systemic Therapy Update Bulletin October 2014 Volume 17, Number 10
2. BC Cancer Systemic Therapy Update Bulletin May 2018 Volume 21, Number 5
3. BC Cancer Policy. Management of Dose Banded Chemotherapy Treatments: III-140
4. BC Cancer Procedure. III-140 Management of Dose Banded Cancer Drug Treatments Procedure