
Reporting Title: Busulfan, IV Dose, AUC, P**Performing Location:** Rochester**Necessary Information:**

The time the drug administration is started and completed, the patient's dose (mg every 6 hours), body weight (kg), and age (years) must be submitted with the specimens. Without infusion start time, exact time of specimen collection, dose, and body weight, the area under the curve and clearance cannot be calculated. Age is required for assessment of the correct dose per body weight.

A completed Busulfan Information: Mail-In Specimen Instructions (T559) is required.

Specimen Requirements:

Four plasma specimens with different collection times (keep all specimens under 1 order) are required.

Collection Container/Tube: Green top (sodium heparin) (Plasma gel/PST are not acceptable)

Submission Container/Tube: Plastic vials

Specimen Volume: 1 mL

Collection Instructions:

1. The first specimen should be collected immediately after completion of the first intravenous infusion of 0.8 mg/kg busulfan.
2. Additional specimens should also be collected at 1 hour, 2 hours, and 4 hours after completion of infusion.
3. Label each specimen with exact time of collection.
4. Busulfan degrades quickly at ambient temperature. Specimens must be kept in wet ice slurry or refrigerated at 4 degrees C. Specimens must be centrifuged within 2 hours after collection. Separate the plasma and transfer to individual 5-mL plastic vials, labeled with exact time of collection. Immediately freeze at -20 degrees C.

Additional Information:

This test should only be ordered when the following criteria are met:

- Busulfan dosing protocol must be intravenous administration of 0.8 mg/kg doses every 6 hours over 4 days, for a total of 16 doses
- Specimens must be collected as described below:
 - 1 specimen collected immediately after completion of the first 2-hour IV infusion of busulfan
 - 1 specimen collected 1 hour after the infusion is completed
 - 1 specimen collected 2 hours after the infusion is completed
 - 1 specimen collected 4 hours after the infusion is completed and prior to the next infusion of busulfan

Specimen Minimum Volume:

0.25 mL

Forms:

1. Busulfan Information: Mail-In Specimen Instructions (T559) is required
2. If not ordering electronically, complete, print, and send a Therapeutics Test Request (T831) with the specimen.

| Specimen Type | Temperature | Time | Special Container |
|-------------------|--------------------|----------|-------------------|
| Plasma Na Heparin | Frozen (preferred) | 28 days | |
| | Refrigerated | 72 hours | |

Ask at Order Entry (AOE) Questions:

| Test ID | Question ID | Description | Type | Reportable |
|---------|-------------|---------------------|------------|------------|
| DOSE | DSE | Initial Dose | Plain Text | Yes |
| DOSE | DAT16 | Infusion Start Date | Plain Text | Yes |
| DOSE | TM82 | Infusion Start Time | Plain Text | Yes |
| DOSE | DAT17 | Infusion Stop Date | Plain Text | Yes |
| DOSE | TM65 | Infusion Stop Time | Plain Text | Yes |
| DOSE | W8 | Weight | Plain Text | Yes |
| BU2H | DRDT2 | Draw Date | Plain Text | Yes |
| BU2H | DRTM2 | Draw Time | Plain Text | Yes |
| BU3H | DRDT3 | Draw Date | Plain Text | Yes |
| BU3H | DRTM3 | Draw Time | Plain Text | Yes |
| BU4H | DRDT4 | Draw Date | Plain Text | Yes |
| BU4H | DRTM4 | Draw Time | Plain Text | Yes |
| BU6H | DRDT6 | Draw Date | Plain Text | Yes |
| BU6H | DRTM6 | Draw Time | Plain Text | Yes |

Result Codes:

| Result ID | Reporting Name | Type | Unit | LOINC® |
|-----------|---------------------|--------------|------|---------|
| DSE | Initial Dose | Alphanumeric | | 93477-8 |
| DAT16 | Infusion Start Date | Alphanumeric | | 88063-3 |
| TM82 | Infusion Start Time | Alphanumeric | | 88060-9 |
| DAT17 | Infusion Stop Date | Alphanumeric | | 88062-5 |
| TM65 | Infusion Stop Time | Alphanumeric | | 88061-7 |
| W8 | Weight | Alphanumeric | | 29463-7 |

| Result ID | Reporting Name | Type | Unit | LOINC® |
|-----------|----------------------------------|--------------|----------------|---------|
| 24220 | Age | Alphanumeric | yr | 30525-0 |
| 24225 | Area Under the Curve, (0-6 Hour) | Numeric | (mcmol/L)(min) | 93476-0 |
| 24226 | Clearance | Numeric | (mL/min)/kg | 93475-2 |
| 24227 | Recommended Dose | Numeric | mg q6h | 93477-8 |
| DRDT2 | Draw Date | Alphanumeric | | 33882-2 |
| DRTM2 | Draw Time | Alphanumeric | | 49049-0 |
| 24221 | Busulfan result | Numeric | ng/mL | 93436-4 |
| DRDT3 | Draw Date | Alphanumeric | | 33882-2 |
| DRTM3 | Draw Time | Alphanumeric | | 49049-0 |
| 24222 | Busulfan result | Numeric | ng/mL | 93435-6 |
| DRDT4 | Draw Date | Alphanumeric | | 33882-2 |
| DRTM4 | Draw Time | Alphanumeric | | 49049-0 |
| 24223 | Busulfan result | Numeric | ng/mL | 93434-9 |
| DRDT6 | Draw Date | Alphanumeric | | 33882-2 |
| DRTM6 | Draw Time | Alphanumeric | | 49049-0 |
| 24224 | Busulfan result | Numeric | ng/mL | 93433-1 |

LOINC and CPT codes are provided by the performing laboratory.

Supplemental Report:

No

Components:

| Test ID | Reporting Name | CPT Units | CPT Code | Always Performed | Orderable Separately |
|---------|-----------------------------------|-----------|----------|------------------|----------------------|
| DOSE | Busulfan, IV Dose, AUC, P | | | Yes | No |
| BU2H | Busulfan, Immediate Post Infusion | | | Yes | No |
| BU3H | Busulfan, 1hr Post Infusion | | | Yes | No |
| BU4H | Busulfan, 2hr Post Infusion | | | Yes | No |
| BU6H | Busulfan, 4hr Post Infusion | | | Yes | No |

CPT Code Information:

80299 x 4

Reference Values:

AREA UNDER THE CURVE
900-1500 (mcmol/L)(min)

CLEARANCE
2.1-3.5 (mL/minute)/kg