

Sea Urchin Beurre Blanc

A Loire butter sauce, no cream and no egg, stabilised by raw sea urchin roe — an emulsifier you can taste. Phospholipids hold the butter; free glutamate carries the umami.

Yield: **10–12** (as a fish sauce) Active: **20 min** Total: **25 min** (to order) Mount: **55–60°C** Roe in: **off heat, ~58°C**

WHERE IT WAS BORN
Beurre blanc — the Loire, at Clémence Lefeuivre's *auberge* near Nantes, c.1890; the urchin (*oursin* / *riccio*) from Mediterranean coasts eaten since antiquity.

EATEN, AUTHENTICALLY
The Loire sauce napped over poached river fish (pike, shad); the roe itself, raw with lemon and bread, or worked into Provence's *oursinade*.

HOW IT'S USED NOW
A restaurant finish for white fish; the same roe goes raw through hot *spaghetti ai ricci* (below) or onto sushi rice as *uni*.

INGREDIENTS

WEIGHT (LB/OZ) · CUPS / VOLUME IN RIGHT COLUMN

REDUCTION

Dry white wine (<i>Muscadet</i>)	100ml
White wine vinegar	50ml
Shallot, finely minced	1

MOUNT & FINISH

Cold unsalted butter (<i>cubed</i>)	7.1 oz	¾ cup
Fresh sea urchin roe (<i>deep orange</i>)	1.8 oz	
Fine sea salt	0.07 oz	⅓ tsp
Lemon (<i>a few drops</i>)	1	

THE RATIO — BUTTER = 100%
Butter 100 · Roe 25 · acid reduced hard. A quarter-weight of roe locks the emulsion and reads on the palate; reduce the wine + vinegar until syrupy so the finish is butter, not vinegar.

Kit: small heavy saucepan · balloon whisk · immersion blender · fine sieve · probe thermometer · bain-marie for holding

METHOD

1. **Build the reduction.** Simmer 100ml wine, 50ml vinegar + the shallot to **~2 tbsp** syrupy liquid. Strain out the shallot; return liquid to the pan.

The acid stops the finished sauce reading greasy; the reduced water is what the butter emulsifies into. — This, Molecular Gastronomy

2. **Mount the butter.** Low heat, whisk in 200g cold butter a few cubes at a time, never stopping, adding more as the last melts. Hold **55–60°C**.

Cold butter melts slowly, keeping its water + proteins dispersed as a stable emulsion; too hot or too fast and the fat pools and splits. — McGee 2004

3. **Blend in the roe.** Off heat, let it fall to **~58°C**. Add 50g roe, immersion blender **10 sec max** to a uniform coral-orange silk.

Above ~65°C the roe proteins tighten + go grainy; blend off heat. Over-blending whips in air + thins. — McGee 2004

4. **Season + serve.** 2g salt, a few drops of lemon. Nap over pan-seared white fish at once, or hold 55°C bain-marie.

Done: Uniform coral-orange; coats the back of a spoon without running; tastes of butter + sea, never “fishy.” Holds **15–20 min at 55°C** without breaking.
Serve: over turbot, John Dory, bass or hake, seared hard on the skin. Quiet plate — the urchin is the voice.

ONE SAUCE, TWO DISHES — SPAGHETTI AI RICCI
The same urchin + butter is, near enough, **spaghetti ai ricci di mare**. Skip the reduction. Soften sliced garlic in oil; off heat mash ²/₃ of the roe into a knob of **cold butter** + a ladle of pasta water to a coral cream; toss through al dente spaghetti off the heat. Lay the rest of the roe raw on top, lemon zest, *no cheese*.

ELEVATION

TIER 1 — NO EXTRA TIME

- Yuzu cut** — swap a third of the vinegar for yuzu
- Lemon zest** — microplaned over the hot sauce
- Samphire** — blanched tips on the plate

TIER 2 — WORTH IT

- Beurre rouge** — red wine + vinegar reduction
- Smoked butter** — mount with cold-smoked butter
- Champagne base** — dry sparkling in the reduction

TIER 3 — RESTAURANT

- Caviar finish** — a few grains at the pass
- Oursinade** — the Provençal cousin, more roe
- Extra roe lobe** — one raw tongue laid on top

TROUBLESHOOT

Broke, oily	Too hot / butter too fast. Whisk into a tbsp cold water in a fresh pan, dribble back in.
Grainy	Roe cooked >65°C. Blend off heat at ~58°C; can't be undone.
Thin, won't coat	Over-blended / loose reduction. Reduce harder; mount in more cold butter.
Tastes flat	Under-acid or under-salted. Lemon + a pinch of salt; the acid is structural.
Fishy / ammonia	Stale roe. Fresh, firm, deep-orange only; if it smells of ammonia, bin it.

CHARTER PREP & STORAGE

The make-ahead	The reduction. Make it, mount at service in 5 min.
Reduction	3 d cold, covered. Re-simmer before mounting.
Roe	Buy day-of; on ice 0–2°C. Never freeze.
Hold	55°C bain-marie, 20 min ceiling. Whisk each plate.
Crew tier	Drop the urchin; mount brown butter for a beurre noisette sauce.
Never	Don't refrigerate or boil the finished sauce — both break it.